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September 8, 2015

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Re: State of Alabama Ambient Air Monitoring Plan for 2015

Dear Administrator McTeer Toney,

On July 2, 2015, GASP submitted comments to Alabama's 2015 Ambient Air Monitoring Plan. We received a reply from the Alabama Department of Environmental Management (ADEM) and the Jefferson County Department of Health (JCDH) to relevant sections of our comment.

I am writing you concerning a troubling response we received from JCDH. Specifically, JCDH's responded to Section III.B.1 of GASP's comment (ATTACHED) stating that "the commenter is under the impression that Walter Coke's Fiber Division (Mineral Wool Plant) shutdown in 1999, however this is incorrect. The Mineral Wool Plant, across from the Shuttlesworth monitor, operated up until the morning of December 11, 2009."

GASP was "under the impression" that the mineral wool facility closed in 1999 because JCDH said as much (ATTACHED). As evidenced in GASP's comment, I included JCDH's assertion that the facility closed in 1999 and referenced that information in footnote 21. JCDH said on page 17 of the 2015 Ambient Air Monitoring Plan: "JCDH is proposing to discontinue monitoring for CO at the Sloss Shuttlesworth site due to low concentrations and the facility shutdown of the source (in 1999), Walter Energy Mineral Wool facility that was the primary contributor to and reason for monitoring CO at the Sloss Shuttlesworth site. JCDH installed the CO monitor in 1996 as a fenceline site for the mineral wool facility."

Much of GASP's comment to this specific aspect of the 2015 Ambient Air Monitoring Plan focused on exceedances for 1 hour and 8 hour duration descriptions for CO between 2001 and 2008. Such exceedances were confounding to GASP based off JCDH's assertion that the mineral wool facility closed in 1999. The new information we received from JCDH on July 15, 2015 regarding the actual closure of the mineral wool facility in 2009 would result in an entirely different analysis by GASP.

40 CFR §58.10(a)(2) states that "[i]f the State or local agency has already provided a public comment opportunity on its plan and has made no changes subsequent to that comment opportunity, and has submitted the received comments together with the plan, the Regional Administrator is not required to provide a separate opportunity for comment." GASP believes that the aforementioned error in the Ambient Air Plan where JCDH misstated their reasoning for closing the CO monitor at the Sloss Shuttlesworth site should be brought to the attention of EPA.

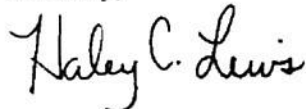
Because the critical error in stating when the mineral wool facility closed, GASP was not able to accurately comment on discontinuing monitoring for CO at the Sloss Shuttlesworth site. Moreover, the public has not been provided access to the correct information that GASP received as a result of commenting on the Ambient Air Monitoring Plan. As such, it cannot be said that the public was given a meaningful opportunity to comment where JCDH's reasoning to discontinue monitoring for CO at the Sloss Shuttlesworth site was incorrectly stated. The opportunity for the public to inspect the plan and comment is but a guise if agencies are allowed to misstate their own reasoning for discontinuing a monitor. For the public to be involved in a meaningful way, as 40 CFR §58.10 requires, the public should receive access to an accurate and factual Ambient Air Monitoring Plan.

Because the purpose of the Ambient Air Monitoring Plan is to provide the framework for the establishment and maintenance of an air quality surveillance system and to list any changes that are proposed to take place to the current network during 2015, it is critical that the plan be thorough and accurate. As such, when an agency unwittingly commits an error, and in this situation, attributes such error to the commenter's understanding and reading comprehension skills, it is very concerning. As the final reviewer of such state air monitoring plans, GASP felt that EPA should be aware that the public participation of Alabama's ambient air monitoring plan for 2015 was imperfect.

I am also attaching to this letter the comments made by the Southern Environmental Law Center (SELC) and the response they received from ADEM. You will notice SELC found errors in the plan unrelated to the aforementioned error that GASP encountered. It concerns GASP further that another commenter encountered errors in Alabama's 2015 Ambient Air Monitoring Plan that complicated SELC's ability to fully engage in the public comment period in a meaningful way.

Thank you for your assistance in this matter. Please do not hesitate to contact me should you need any additional information.

Sincerely,



Haley Colson Lewis
Programs Manager

CC: Jonathan Stanton, JCDH
Mark E. Wilson, JCDH
Ron Gore, ADEM
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July 21, 2015

Keith Johnston
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Subject: Comments on the State of Alabama Ambient Air Monitoring 2015
Consolidated Network Review

Dear Mr. Johnston:

Thank you for your interest and participation in the public review of the 2015 Ambient Air Monitoring Plan. We received your comments by email on July 16, 2015. This plan is a consolidation of the network evaluations performed by ADEM and the two local air quality agencies in Alabama, the Jefferson County Department of Health and the Huntsville Division of Natural Resources and Environmental Management. ADEM prepared the responses which refer to areas outside Jefferson County and the Jefferson County Department of Health wrote the responses relevant to its jurisdiction:

Section I. A. "Fine Particulates and Ozone Standards in the Birmingham-Hoover MSA"

Your letter suggests that the ozone monitoring network should "remain robust" in light of a proposal to lower the NAAQS. EPA rules presently require a minimum of two ozone monitors for the Jefferson/Shelby County area. ADEM and JCDH collectively operate eight ozone monitors in the two-county area. Therefore, the Birmingham area has an ozone monitoring network which far surpasses EPA requirements for the area. There are no plans at present to reduce the size of this network.

Regarding your concerns about PM_{2.5} monitoring, please see our response to Section I.C (below).

In **Section I. A** and **Section IV** you state that Alabama has not met the requirement to perform and report the 5-year Network Assessment. This is incorrect. ADEM submitted the initial assessment in 2010, and recently submitted the 2015 document as well.

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Section I. B. "Data Variance and Exclusion Request for the North Birmingham Site (AQS ID 01-073-0023)"

Due to the questionable past performance of FEM (continuous) monitors versus FRM (filter based) monitors nationally, EPA revised the PM_{2.5} NAAQS on January 15, 2013, to allow state and local agencies to evaluate the performance of individual FEMs to determine if the data is of sufficient quality for comparison to the NAAQS. If a site is operating an FRM as the primary monitor and is collocated with a continuous FEM of sufficient quality, then the data from the FEM could be combined with the FRM data for comparison to the NAAQS. If the FEM data is biased in comparison to the FRM then the site record could be under-reporting or over-reporting relative to the actual conditions. Neither of these outcomes is desirable. The rule allowed a 2-year period for this evaluation. JCDH has been and continues to be concerned with the performance of the FEM vs the FRM for PM_{2.5}, even though newer FEM technologies have been installed. JCDH evaluated the FRM vs FEM data as a combined 2-year set and for each separate year. In the combined dataset the comparison only marginally met the federal requirements for "sufficient" quality. The slope was biased very low and the intercept was biased very high. During the second year of operation, 2014, the comparison was substantially outside of the acceptable ranges. The slope was 0.845. JCDH is giving higher importance to the latest data since this is more representative of the current performance of the monitor. Comparison of the FEM data to the FRM data continues to show inconsistent performance of the FEM. At times the data meets the EPA guidelines for an FEM sampler but at other times it is well outside the acceptable limits to meet the FEM standard. The current FEM technology appears to have some problems while the FRM's continue to operate without issues. JCDH will continue to operate and compare the FEM and FRM samplers and work with the vendor to improve the data correlation. In the meantime, PM_{2.5} concentrations are being properly monitored in the area using the EPA approved and more reliable filter-based FRM monitoring methodology. It should be noted that all available data shows that the PM_{2.5} NAAQS in the area are being met. The 2012-2014 design value for the North Birmingham monitor based on FRM data only is 11.3 µg/m³ for the annual standard (NAAQS=15µg/m³) and 23 for the daily standard (NAAQS=35 µg/m³). The annual design value is 11.7 µg/m³ and the daily design value is 23 if continuous data is filled in on days without FRM data.

JCDH plans to request that data collected at the North Birmingham continuous FEM monitor not be used for comparison to the NAAQS.

Section I. C. "Pelham PM_{2.5} Monitor Closure (AQS ID 01-117-0006)"

ADEM lost access to the building where the Pelham PM_{2.5} monitor was located by demand of the owner. ADEM was unable to find an acceptable site at that location or in the immediate vicinity; therefore, the site was closed in June 2015. After a thorough review of

the network in the Birmingham MSA. ADEM found that this monitor had the lowest readings in the area. The area is required by EPA to have a minimum of three PM_{2.5} monitors. The area presently has five PM_{2.5} monitors, not including the Pelham site. Therefore, without the Pelham monitor, the Birmingham MSA will still easily meet EPA's monitoring requirements. The PM_{2.5} monitor was placed in Pelham primarily to evaluate air quality downwind of the large central business district of Birmingham, and secondarily to include local PM_{2.5} sources. The site has been operational since 1999 and was reporting concentrations well below the NAAQS. For these reasons, ADEM will not continue to operate a monitor in this area. The Jefferson County Department of Health will continue to operate a robust network of monitors that will be adequate to characterize PM_{2.5} levels in the Birmingham MSA, including a continuous PM_{2.5} monitor at the nearby Hoover site.

Section I. D. "Discontinuance of PM_{2.5} Monitor at Sloss/ Shuttlesworth (AQS 01-073-6004)"

JCDH elected to monitor (special study) for PM_{2.5} to address the JCDH's and ATSDR's concerns. The FRM PM_{2.5} data collected at the Shuttlesworth site continuously spanned approximately 12 months between the middle of 2013 and the middle of 2014. Therefore, there was not 2 full years of data collected at this site. The PM_{2.5} data that was sampled at the Shuttlesworth site was compared to the FRM PM_{2.5} sampled at the North Birmingham monitoring site during the same time period and it was concluded that the monitors were comparable and there was no need to continue to monitor for PM_{2.5}. Please note this plan does not preclude JCDH from conducting further studies.

SELC also states that JCDH "wants to exclude data from use for the North Birmingham site, but, simultaneously, use it to justify closure of monitoring at the Sloss Shuttlesworth site." All data from both sites was FRM data and, accordingly, this data was used for comparison purposes and not the 2013-2014 FEM data at the North Birmingham site (See response in Section I.B. above). It should be noted that JCDH will continue to monitor the criteria pollutant PM₁₀ at the Shuttlesworth site.

Section II "Four Supplemental Speciation Monitors"

In 40 CFR 58, Appendix D, states are required to continue to conduct speciation monitoring and analysis at sites designated to be part of the Speciation Trends Network (STN) and are encouraged to operate additional (supplemental) speciation monitors. In 2014, EPA performed an extensive assessment of the chemical speciation network with the goals of creating a network that is financially sustainable and to redistribute resources to new or high priorities from those of low-priority. As stated in the plan, the sites in Montgomery and Huntsville were identified as low-priority and were defunded by EPA so that the resources could be reinvested in the national network. JCDH continues to operate

a speciation monitor designated as part of the STN at North Birmingham and a supplemental speciation monitor at Wylam. ADEM will continue to operate a supplemental monitor in Phenix City. ADEM has the discretion to re-initiate expensive speciation monitoring in any areas where $PM_{2.5}$ concentrations may begin to increase and may be of concern. The information on page 15 of the Annual Monitoring Plan, which states that there are still four speciation monitors in the State, is in error and will be corrected to reflect the current supplemental network.

Section III "Dates Used in Data Assessments and for Evaluation"

Your letter points out some typographical errors in the plan. The population data is consistent and was based on 2014 population estimates from the US Census Bureau and design values were based on the years 2012 through 2014. A review of the document shows that some of the column headings referred to the wrong dates. Also, the reference on page 27 was incorrect and will be amended.

I hope assuages your concerns.

Sincerely,



Ronald W. Gore, Chief
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RWG/CH/bdc

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July 16, 2015

Via First-class Mail and Electronic Mail

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**Re: Comments on the State of Alabama Ambient Air Monitoring 2015
Consolidated Network Review**

Dear Mr. Malair,

The Southern Environmental Law Center (SELC) respectfully submits the following comments on the Alabama Annual Air Monitoring Plan for 2015 ("Plan") as presented by the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health (JCDH) and the Huntsville Department of Natural Resources and Environmental Management (HDNREM) (collectively referred to here as "state air resource agencies").¹

SELC has significant concerns about the Plan as proposed. Specifically, SELC is concerned about the closure and discontinuance of certain monitors in the air monitoring network and the exclusion of specific data from one monitor in the network, particularly with regard to PM_{2.5} monitoring. In addition, we have questions and concerns about PM_{2.5} speciation stations in the state. There also appears to be discrepancies and/or confusion about referenced sources of dates and data in the Plan. Finally, it appears that the state air resource agencies have not completed their required Five Year Network Assessments of the air monitoring network in the state.

¹ SELC would like to thank the JCDH for working with us to get data concerning some of the monitoring sites cited in this comment letter. SELC would also like to thank ADEM for granting an extension for these comments in order to secure this data.

I. Fine Particulates (PM_{2.5}) and Ozone

Monitors for fine particulates and ozone are vital keys to maintaining an adequate air monitoring and surveillance network in the state and protecting public health. These two pollutants contribute to over 200,000 premature deaths in the United States each year.² Their effects are felt most severely by children, the elderly, people with pre-existing conditions, and otherwise healthy adults engaged in strenuous or frequent outdoor activity.³

Fine particles cause health problems such as heart attacks, asthma attacks, decreased lung function, and bronchitis.⁴ Exposure to fine particle concentrations as low as 10 micrograms per cubic meter (“µg/m³”)—which is lower than the current federal standards—are associated with a 2% increase in premature deaths for exposures as brief as two days, and a 9% increase in the long term.⁵ Decreases in fine particle concentrations add months, if not years, onto people’s lives.⁶ Studies show that, in major cities in the South, such as Charlotte and Raleigh, N.C., decreases in fine particle concentrations are responsible for a 15% life expectancy increase in recent decades.⁷

Ozone exposure leads to premature death and a host of breathing problems, including coughing, sore throats, damage to the lungs, and aggravation of asthma, emphysema, and chronic bronchitis. Ozone forms when nitrogen oxides react with volatile organic compounds in the atmosphere.⁸ Because the reaction is catalyzed by sunlight, high ozone days occur most frequently during hot stagnant summers.⁹ Coal-fired power plants, large industrial facilities, motor vehicles, and gasoline vapors are all sources of ozone precursors.¹⁰ Rural areas are also

² See Steven R.H. Barrett et al., *Air Pollution and Early Deaths in the United States Part I: Quantifying the Impact of Major Sectors in 2005*, 79 *Atmospheric Environment* 198, 198 (2013) (modeling particulate matter and ozone emissions from combustion sectors and concluding that these pollutants result in approximately 200,000 premature deaths in the United States annually).

³ See generally EPA, *Ground-level Ozone Health Effects*, <http://www.epa.gov/groundlevelozone/health.html> (last visited July 16, 2015).

⁴ See generally EPA, *Particulate Matter (PM) Health*, <http://www.epa.gov/pm/health.html> (last visited July 16, 2015).

⁵ Liuhua Shi et al., *Low-Concentration PM_{2.5} and Mortality: Estimating Acute and Chronic Effects in a Population-Based Study*, *Envtl. Health Persp.* (advance publication June 3, 2015), available at <http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2015/6/ehp.1409111.acco.pdf>.

⁶ See C. Arden Pope III et al., *Fine-Particulate Air Pollution and Life Expectancy in the United States*, 360(4) *New Eng. J. Med.* 376, 382–84 (2009), available at <http://www.nejm.org/doi/pdf/10.1056/NEJMsa0805646>.

⁷ *Id.*

⁸ *Chemistry of Ozone Formation*, NASA, http://earthobservatory.nasa.gov/Features/ChemistrySunlight/chemistry_sunlight3.php (describing tropospheric ozone production)

⁹ *Id.*

¹⁰ *Id.*

susceptible to ozone exposure as molecules can be transported long distances causing harm to human health and the environment.¹¹

There is no evidence of a safe level of exposure for either of these pollutants, and both have health effects even below the current National Ambient Air Quality Standards (“NAAQS”).¹² In response to evidence of health problems caused by these pollutants at lower and lower levels, and pursuant to statutory requirements to evaluate these standards every five years, EPA has repeatedly lowered both the fine particles and ozone NAAQS in recent years. EPA lowered the annual standard for fine particle pollution to 12 $\mu\text{g}/\text{m}^3$ in 2013.¹³ In 1997 the ozone standard was lowered to 80 parts per billion (“ppb”) and in 2008 it was again lowered to 75 ppb. In late 2014, EPA proposed an 8-hour ozone standard between 65 and 70 ppb, and is also considering comments on an even lower standard of 60 ppb based on health effects at that level.¹⁴ The final rule is expected in November of this year.¹⁵

A. Fine Particulates and Ozone Standards in the Birmingham-Hoover MSA

Table 8 in the Plan shows that all eight ozone monitors in the Birmingham-Hoover MSA have design values greater than 85% of the current NAAQS for ozone. When the proposed 8-hour ozone level is lowered by EPA, to even a moderate range of 70 – 65 ppb, the Birmingham-Hoover MSA may yet again be in non-attainment for 8-hour ozone levels. If the lowest range of the proposed 8-hour standard is chosen, 60 ppb, the Birmingham-Hoover area will almost certainly be in violation of the 8-hour ozone standard. This proposed tightening of the NAAQS for ozone requires that the air monitoring network remain robust to protect public health, and that the state air resource agencies complete their required five year reviews for the state-wide monitoring network.

Similarly, Table 10 in the Plan shows that all of the $\text{PM}_{2.5}$ design values for the seven monitors in the Birmingham-Hoover MSA, excluding one, are greater than 85% of the current NAAQS for annual $\text{PM}_{2.5}$, and three monitors were excluded from calculations because of incomplete datasets. Yet, even with the concerns about $\text{PM}_{2.5}$ pollution and high design value

¹¹ *Id.*

¹² *See Am. Trucking Associations, Inc. v. EPA*, 283 F.3d 355, 360 (D.C. Cir. 2002) (internal quotation marks and alterations omitted) (recognizing the “lack of a threshold concentration below which [particulate matter and ozone] are known to be harmless.”); NAAQS for Particulate Matter, 78 Fed. Reg. 3086, 3098 (Jan. 15, 2013) (explaining that there is “no population threshold, below which it can be concluded with confidence that $\text{PM}_{2.5}$ related effects do not occur”).

¹³ *See* National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3086, 3088 (Jan. 15, 2013).

¹⁴ *See* National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75234, 75296–300 (proposed Dec. 17, 2014).

¹⁵ Office of Information and Regulatory Affairs, Review of the National Ambient Air Quality Standards for Ozone, Reginfo.gov, <http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201410&RIN=2060-AP38> (last visited July 16, 2015).

readings in the Birmingham-Hoover MSA, the JCDH and ADEM are proposing to significantly weaken the PM_{2.5} monitoring system across the MSA. The JCDH is proposing the discontinuance of a PM_{2.5} monitor in an area of particular pollution concern with a highly susceptible populace; JCDH is requesting a variance and exclusion from using PM_{2.5} data for NAAQS assessment in this same general area; and ADEM is not relocating the PM_{2.5} monitor in Shelby County, instead choosing to shut down the monitor. These ill-advised changes will not protect public health and will add to the overall degradation of the air monitoring surveillance network in the state. These changes are considered in detail below.

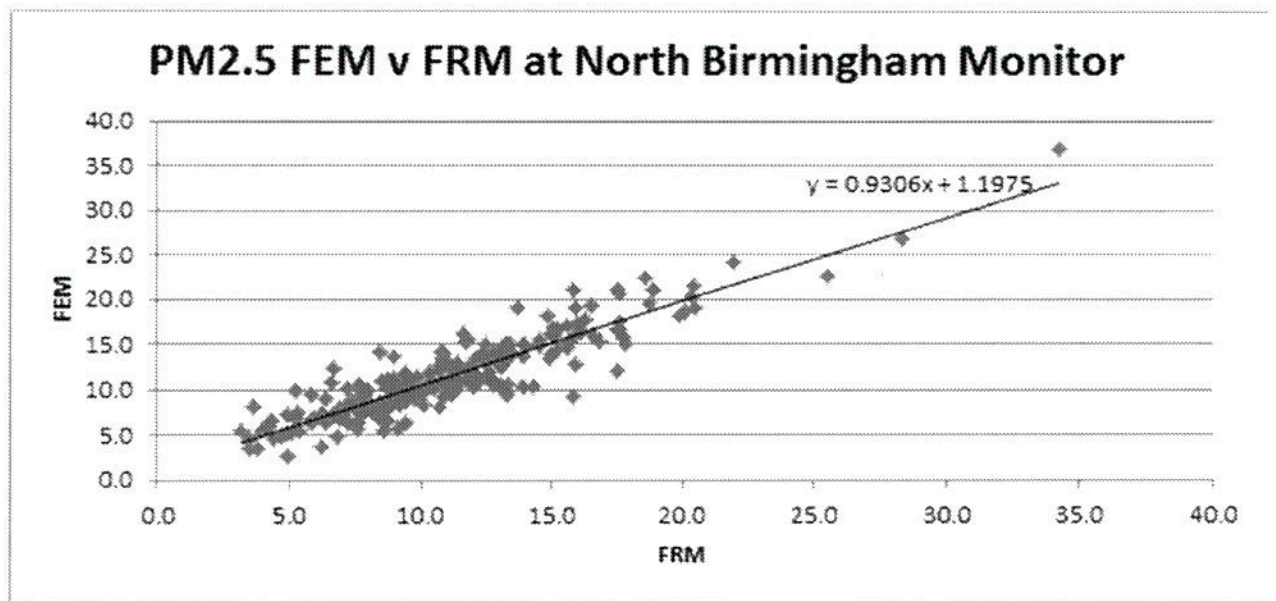
B. Data Variance and Exclusion Request for the North Birmingham Site (AQS ID 01-073-0023)

JCDH proposed a “Variance/Exclusion request from using the PM_{2.5} continuous FEM data at the North Birmingham site for NAAQS purposes” due to unspecified “inconsistencies in measurements and readings.”¹⁶ As rationale, the Plan states that “[p]lease note that JCDH is concerned with the performance of the PM_{2.5} continuous FEM especially in 2014 as this represents the latest data set and indicates that the PM_{2.5} continuous FEM is not operating within an acceptable range to be used for the NAAQS.”¹⁷ It would appear from a review of the technical analysis provided on p. 58 that the slope and the correlation values (between the FRM and the FEM) for 2014 did not meet the regulatory criteria for these parameters. In particular, the slope should lie in a range between 0.9 and 1.1 while the actual JCDH calculated 2014 slope was 0.845; and that the minimum correlation of 0.89198 did not meet the threshold value of 0.93. The analysis on p. 57 showed that the 2013 comparison met all of the requisite parametric objectives.

It was not clear however, why the JCDH chose to separately analyze the 2013 and the 2014 data. We did not find any requirement in the regulations (i.e., relevant portions of 40 CFR Part 58 and, more importantly Subpart C of 40 CFR Part 53) that the comparison dataset should be segregated in the manner that JCDH did. We requested the 2013 and 2014 datasets for the FRM and FEM PM_{2.5} measurements collected at the North Birmingham monitor. Excluding flagged/non-numeric data, we compared the two sets of measurements including all of the 2013 and 2014 numeric data from this site. Our comparison is shown in the graph below. As the linear regression equation provided shows, both the slope and the intercept are within acceptable ranges. Our analysis shows a Pearson correlation coefficient of 0.909, which is slightly lower than the threshold value of 0.932. However, we have not been able to investigate specific data points in the data sets provided to us in our analysis with regard to assessing the validity of each of these datasets.

¹⁶ See ADEM, *State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review*, 7, 29, <http://adem.alabama.gov/programs/air/airquality/2015AmbientAirPlan.pdf> (last visited July 16, 2015).

¹⁷ *Id.* at 56, 58 (emphasis bolded in original).



Regardless of the correlation coefficient falling just outside of the desirable range, which could be due to the inclusion of just one or a few invalid data points or an exclusion of a few valid data points, and in view of the acceptable slope and intercept values, we do not believe that it is proper to reject all of the collected FEM data for NAAQS assessment purposes for this critical monitor, as is now sought by JCDH. There is no requirement in the regulations that this data set be thrown out, and we believe that, especially with PM_{2.5} in this MSA and in this section of Birmingham, the more data that is used to assess NAAQS compliance, the more robust the resulting assessment.

Instead, we recommend that all of the collected data since 2013 through December 2015 (as proposed by the Plan, see p. 56) be subject to rigorous validation and collectively compared per methods provided in Subchapter C of 40 CFR Part 53 in early 2016, subject to public review. Any conclusions regarding suitability for NAAQS assessment should be deferred until that time. Thus, it is premature to request a variance as sought by JCDH on this issue. Furthermore, if JCDH and ADEM are proposing doing more with fewer monitors, this data should be included.

C. Pelham PM_{2.5} Monitor Closure (AQS ID 01-117-0006)

ADEM is proposing the closure (or has closed) the Pelham PM_{2.5} monitor in the Birmingham-Hoover MSA. ADEM states three basic reasons for this closure: (1) the owner of the building asked ADEM to remove the monitor, and they have been unable to “find an acceptable site in the same vicinity”¹⁸; (2) that the Birmingham-Hoover MSA will still meet the required number of PM_{2.5} monitors required by the regulations; and (3) this monitor has the

¹⁸ *Id.* at 6.

lowest design values of all the PM_{2.5} monitors. SELC strongly disagrees with this decision and respectfully asks ADEM to reconsider.

Foremost, the Birmingham-Hoover MSA teeters on the brink of compliance with the current PM_{2.5} NAAQS.¹⁹ As ADEM is aware, the concentrations of PM_{2.5} fluctuate over time and space. Reducing network coverage of such a damaging pollutant, ultimately, reduces protections for the exposed public, as described in § I. of this document. Also, ADEM appears to have removed this monitor because it had some of the lowest design values of the PM_{2.5} monitors in the MSA. However, of the seven monitors in the MSA, three have incomplete datasets. It matters little if there are the “required number of monitors...” if the data being collected in those monitors is not complete. Regardless, ADEM has just four monitors with complete datasets. Thus, closure of Pelham is a significant degradation of the air monitoring network for one of the most significant pollutants for public health in the largest MSA in the state.

Furthermore, ADEM lists the “monitoring objective” of this site as “Highest Concentration/ Birmingham MSA.” Considering where this monitor is located, in one of the fastest growing areas of the state, removing it and not finding a replacement location is imprudent and potentially harmful. The removal of the Pelham monitor would also create a gap in geographic coverage for the Birmingham-Hoover MSA, as there will be no coverage in Shelby County.

D. Discontinuance of PM_{2.5} Monitor at Sloss/ Shuttlesworth (AQS ID 01-073-6004)

The JCDH has proposed to discontinue the monitoring of PM_{2.5} (and CO) at the Sloss Shuttlesworth site. SELC strongly disagrees with this decision for a number of reasons and respectfully requests JCDH to reconsider.

To begin, JCDH’s purported reasons for removing this monitor do not compute. JCDH claims that Sloss Shuttlesworth had concentrations similar to the North Birmingham monitor (AQS ID 01-07300023). However, review of Table 10 in the Plan shows that the dataset for Sloss Shuttlesworth was incomplete for PM_{2.5} from 2012 – 2014. For JCDH to declare a dataset incomplete and then use that incomplete dataset as a “comparison” to justify removing it from the network does not make sense. The Plan also does not provide any details of this so-called “comparison.” Furthermore, JCDH is also applying for a variance/ exclusion from the use of 2013-14 data from the North Birmingham monitor for NAAQS compliance assessment. According to this reasoning, JCDH wants to exclude data from use for North Birmingham, but, simultaneously, use it to justify the closure of monitoring at the Sloss Shuttlesworth site.

¹⁹ *Id.* at 27-29.

Also, the discontinuance of Sloss Shuttlesworth will continue the erosion of the PM_{2.5} monitoring program in the Birmingham-Hoover MSA. With the loss of the Pelham site and the loss of Sloss Shuttlesworth, then there would only be five sites monitoring for PM_{2.5} in the MSA. Given the track record in gathering complete datasets, it is likely that these five sites, poor geographic coverage notwithstanding, will not all have five complete data sets. The regulatory requirement is based on collecting complete datasets at each monitor and having the proper number of monitors but incomplete datasets completely undermines the regulatory requirement. Of those five sites remaining, two have been declared to have incomplete datasets for 2012 - 2014. That leaves only four complete datasets, including Pelham, which is now closed, for 2012 -2014.

Finally, the Sloss Shuttlesworth site was monitored due to “high population exposure.” The population in this area is still exposed to significant levels of pollutants and has historically been exposed to significant pollutant levels.

Again, SELC believes that this is an important site for the integrity of the PM_{2.5} network in the Birmingham-Hoover MSA, and we believe that it should stay open.

II. Four Supplemental PM_{2.5} Speciation Monitors

The state is required to operate PM_{2.5} supplemental speciation stations to characterize the constituents of PM_{2.5}.²⁰ According to the Plan, EPA chose to discontinue funding of the speciation monitors in Huntsville and Montgomery, and ADEM and HDNREM closed these monitors in January of 2015.²¹ On page 15 of the Plan, it states that there are currently four speciation monitors in the state, including Huntsville and Montgomery. The Plan should note that the monitors for Huntsville and Montgomery are no longer active, and there are now only two speciation monitors in the state. This is further indication of the continued erosion of the monitoring network in the state and the need for rigorous annual and Five Year Network Reviews to track the effectiveness and continuity of air monitoring throughout the state.

III. Dates Used in Data Assessments and for Evaluation

Several dates are used for data assessment and collection, and it is not apparent from the Plan which datasets are being used and if those are indeed the correct datasets. For example, in the text of the assessment dealing with PM_{2.5} on page 27, the text reference is that the data in Table 10 is based on data from 2011-2013. But, on Table 10, it lists the data as being reflective of the 2012-2014. It is difficult to see which set of years is correct in order to better understand and comment on the finding from this text and the correlating Table 10.

²⁰ *Id.* at 15.

²¹ *Id.* at 6.

Also, there needs to be a review for consistency of the data used in this Plan. For example, Tables 5 and 10 uses population estimates from 2013, while Table 2,3 and 8 uses 2014 population estimates. Throughout the Plan, there are similar inconsistencies in what data is used and from where it originates. This emphasizes the need for the five year network assessment. This assessment is required by law and would provide the continuity needed in these reviews.

IV. Lack of Required Five Year Air Monitoring Network Assessment for Alabama

On October 17, 2006 the EPA finalized an amendment to the ambient air monitoring regulations to require State and local monitoring agencies to adopt and submit to the Regional Administrator an annual monitoring network plan.²² There was also the inclusion of the requirement to conduct a network assessment once every five years.²³ According to 40 C.F.R. § 58.10(d), the state, or where applicable, the local agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every five years. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby states and tribes or health effects studies.²⁴ The state, or where applicable local, agency must submit a copy of this five-year assessment, along with a revised annual network plan, to the Regional Administrator.²⁵ The assessments are due every five years beginning July 1, 2010.²⁶

The state of Alabama did not complete and submit a five-year assessment beginning on July 1, 2010.²⁷ The importance of these five-year plans are to provide the state and local agencies with information on whether their networks are still meeting the monitoring objectives, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network.²⁸ Alabama does not have an opportunity to even entertain whether to adopt a recommended change or not due to the lack of the five-year network assessment. Instead the state air resource agencies appear to rely on the annual monitoring network review to propose changes, without any coherence with longer term objectives and goals of how these ad-hoc annual changes can adversely alter the overall network's ability to meet its purpose – i.e., to be the critical and robust data sensors providing the exposed population key data with regards to

²² 40 C.F.R. § 58.10(a)(1).

²³ 40 C.F.R. § 58.10(d).

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

²⁷ See EPA, Technology Transfer Network- Ambient Monitoring Technology Information Center, Five-year Network Assessments, <http://www.epa.gov/ttnamti1/5yrnetassess.html> (last visited July 16, 2015).

²⁸ 40 C.F.R. § 58.10(d)

short-term and long-term air quality conditions as well as compliance with underlying standards, which continue to evolve.

Alabama should prepare the required five year monitoring assessment plans and allow adequate time for public review and input.

Conclusion

As a result of the proposed changes discussed above, Alabama's air monitoring networks, already barely adequate in terms of meeting the nominal regulatory requirements for the number of requisite monitors, and especially lacking in the number of complete and valid datasets being collected in the current set of monitors, will become even more inadequate to meeting its essential surveillance function for critical pollutants such as ozone and PM_{2.5}. We urge the state air resource agencies to develop the required long-term (i.e., five-year) assessments and strategies. Any changes proposed via the annual Plans should be consistent with the objectives and strategies of the 5-year assessment. Overall, this approach will serve to strengthen the monitoring network. Making ad-hoc and ill-supported annual changes to the network, as we have noted, only serves to weaken the barely-adequate monitoring network.

Respectfully submitted,



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cc (via e-mail)
Corey Masuca, JCDH



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July 15, 2015

Haley C. Lewis
Program Manager
GASP
732 Montgomery Highway #405
Birmingham, AL 35216

Subject: GASP Comments on Alabama's 2015 Ambient Air Monitoring Plan

Dear Ms. Lewis:

Thank you for your interest and participation in the public review of the 2015 Ambient Air Monitoring Plan. We received your comments by email on July 2, 2015. This plan is a consolidation of the network evaluations performed by ADEM and the two local air quality agencies in Alabama, the Jefferson County Department of Health and the Huntsville Division of Natural Resources and Environmental Management. ADEM prepared the responses which refer to areas outside Jefferson County and the Jefferson County Department of Health wrote the responses relevant to its jurisdiction:

Section II, B. "As proposals to the NAAQS strengthen standards, Alabama should be planning to implement more, not less monitoring."

EPA rules presently require a minimum of two ozone monitors for the Jefferson/Shelby County area. ADEM and JCDH collectively operate eight ozone monitors in the two-county area. Therefore, the Birmingham area has an ozone monitoring network which far surpasses EPA requirements for the area. Your request for additional ozone monitors in the State must be weighed against the well known budgetary woes the State of Alabama presently faces. The Department has limited resources to fund air quality monitoring efforts.

Section III, A. 1. "The Mobile MSA will go from having a monitoring site for PM10 to no longer having a site that monitors PM10"

ADEM has historically monitored PM₁₀ in the Mobile area at many locations. The objective of these monitors was to characterize the air quality in neighborhoods and to locate and monitor the highest concentration in the area. As concentrations have decreased over time, so has the need for PM₁₀ monitors. Discontinuing these monitors allows ADEM to concentrate its limited resources on fine particle monitoring (PM_{2.5}). The WKRG site historically has shown the highest concentration of PM₁₀ for the area, yet this site has recently reported levels that are well below the PM₁₀ NAAQS. Also, the infrastructure at the site was in need of significant repair to keep it safe and to meet the appropriate siting



criteria. For these reasons, ADEM discontinued monitoring at this site. EPA rules do not require any PM₁₀ monitors for the Mobile area.

Data from the PM₁₀ Mobile monitor is shown below:

Year	Highest Daily Reading ($\mu\text{g}/\text{m}^3$)	percent of NAAQS (Max value/150 $\mu\text{g}/\text{m}^3$)*100)
2010	76	51%
2011	59	39%
2012	42	28%
2013	45	30%

Section III, A. 2. “A Monitor should be installed in Pelham to account for primary PM and evenly distribute monitoring geographically throughout the Birmingham-Hoover MSA”

ADEM lost access to the building where the Pelham PM_{2.5} monitor was located by demand of the owner. ADEM was unable to find an acceptable site at that location or in the immediate vicinity; therefore, the site was closed in June 2015. After a thorough review of the network in the Birmingham MSA, ADEM found that this monitor had the lowest readings in the area. The area is required by EPA to have a minimum of three PM_{2.5} monitors. The area presently has five PM_{2.5} monitors, not including the Pelham site. Therefore, without the Pelham monitor, the Birmingham MSA will still easily meet EPA’s monitoring requirements. The PM_{2.5} monitor was placed in Pelham primarily to evaluate air quality downwind of the large central business district of Birmingham, and secondarily to include local PM_{2.5} sources. The site has been operational since 1999 and was reporting concentrations well below the NAAQS. For these reasons, ADEM will not continue to operate a monitor in this area. The Jefferson County Department of Health will continue to operate a robust network of monitors that will be adequate to characterize PM_{2.5} levels in the Birmingham MSA, including a continuous PM_{2.5} monitor at the nearby Hoover site.

Section III, B. 1. “Where the mineral wool piles (MWPs) still have not been removed, it would be imprudent for JCDH to discontinue monitoring for CO at the Sloss Shuttlesworth monitor”

The commenter is under the impression that Walter Coke’s Fiber Division (Mineral Wool Plant) shutdown in 1999, however this is incorrect. The Mineral Wool Plant, across from the Shuttlesworth monitor, operated up until the morning of December 11, 2009. The primary source of CO and the reason for the CO monitor was the melting process at the Mineral Wool Plant. The Department placed the monitor at the fence-line for the purpose of determining what the level of CO was and using it as enforcement tool. The JCDH wrote subsequent NOV’s in 1999 and 2008 as a result of CO levels attributed to the Mineral

Wool Plant's melting process. As JCDH's 2012 Air Quality Report¹ shows on page 13, the CO has dropped dramatically since the shutdown of Walter Coke's Fiber Division and the levels measured now are comparable to North Birmingham and both are well below the NAAQS for CO. It is unclear if the commenter attributes CO to the mineral wool piles, if so this is incorrect. CO or Carbon Monoxide is produced from the combustion of fossil fuels. Regardless of the make-up of the MWP, the pollutant would be in particulate form if the MWP became wind-blown and would be quite coarse in size (PM₁₀) and greater. Please note that any plans to remove the MWP would have to be approved by the Department to ensure that fugitive dust does not cross property lines.

Section III, B. 2. "Where the EPA is still acting under its CERCLA authority at the 35th Avenue Site and the Sloss Shuttlesworth monitor collected data for only two years, JCDH should continue monitoring for PM_{2.5} at this site."

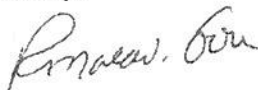
The EPA's CERCLA action is related to soil contamination and the JCDH and the EPA have monitored for air toxics around the community. The JCDH elected to monitor for PM_{2.5} to address the JCDH's and ATSDR's concerns. JCDH does not have any data to suggest that EPA's CERCLA actions have any correlation to the monitored pollutants at the Shuttlesworth site nor is it within the scope of this monitoring plan to do so. Special considerations for CERCLA actions should be addressed to the EPA.

The PM_{2.5} data collected at the Shuttlesworth site continuously spanned approximately 12 months between the middle of 2013 and the middle of 2014. Therefore, there was not 2 full years of data collected at this site. The PM_{2.5} data that was sampled at the Shuttlesworth site was compared to the PM_{2.5} sampled at the North Birmingham monitoring site during the same time period and it was concluded that the monitors were comparable and there was no need to continue to monitor for PM_{2.5} at this time. Please note this plan does not preclude JCDH from conducting further studies.

It should be noted that JCDH will continue to monitor the criteria pollutant PM₁₀ at the Shuttlesworth site.

I hope that this has addressed your concerns.

Sincerely,



Ronald W. Gore, Chief
Air Division

RWG/CH/bdc

¹ <http://www.jcdh.org/misc/ViewBLOB.aspx?BLOBId=687>

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July 2, 2015

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VIA ELECTRONIC MAIL AND US MAIL

Michael E. Malaier, Chief
Air Assessment Unit
Field Operations Division
Alabama Department of Environmental Management
P.O. Box 301463, Montgomery, AL 36130-1463

Re: State of Alabama Ambient Air Monitoring Plan for 2015

Dear Mr. Malaier:

GASP¹ respectfully submits the following comment to the Alabama Department of Environmental Management (ADEM) on the State of Alabama Ambient Air Monitoring Plan for 2015 (“the Plan”). We appreciate the opportunity to make these public comments. GASP not only looks forward to continued compliance with the Clean Air Act (CAA) and the National Ambient Air Quality Standards (NAAQS), but we also will continue to advocate for stronger, more comprehensive air monitoring throughout Alabama.

I. Purpose

With members across the state of Alabama, GASP is a health advocacy organization focused on air quality issues. Accordingly, GASP has a vested interest in the Plan. We are pleased to see decreases in many criteria and non-criteria pollutants.² However, we maintain that a comparison to the past is the incorrect standard. We encourage the regulatory agencies in Alabama—ADEM, the Jefferson County Department of Health (JCDH) and the Huntsville Department of Natural Resources and Environmental Management (HDNREM)—to not simply comply with the NAAQS, but to fully embrace their duty of protecting Alabama’s air quality. Our detailed comments will highlight specific aspects of the Plan that could be improved to reach aspirational, not mere threshold standards of compliance for ensuring that all Alabamians breathe clean, healthy air.

¹GASP is a non-profit health advocacy organization fighting for healthy air in Alabama. We strive to reduce air pollution through education and advocacy — because Alabamians deserve clean, healthy air. <http://www.gaspgroup.org>

² The Birmingham-Hoover MSA saw decreases in three year averages for ozone and particulate matter FOR 2011-2013. U.S. EPA AirData, <http://www.epa.gov/airdata> (last visited Jun. 26, 2015); American Lung Association, [State of the Air 2014](http://www.stateoftheair.org/2015/assets/ALA_State_of_the_Air_2015.pdf) (2014) http://www.stateoftheair.org/2015/assets/ALA_State_of_the_Air_2015.pdf (last visited Jun. 29, 2015)

II. Background

A. Summary of historical air quality issues in Alabama

Birmingham, a major industrial hub, was the subject of the federal government's first intervention in an air pollution emergency. Between June 18 1970 and May 1, 1971, particulates exceeded the 260 level for 54 days in Birmingham.³ The air pollution was worse in North Birmingham, a densely populated poor and lower-middle-class neighborhood where a particulate count of 500 was common and the mean was 287.⁴ Although Birmingham is no longer in a crisis warranting the intervention of the federal government, as we stated previously, a comparison to the past is the incorrect standard. North Birmingham communities still suffer from a disproportionate share of air pollution.⁵

Although the Birmingham metro received the most attention for its air quality issues, the entire state of Alabama, as recent as 2011⁶ ranked as twelfth (12th) in the nation for toxic air pollution. Many areas of rural Alabama and other major cities have historically experienced unhealthy air quality.⁷ From 2011-2013, Madison, Jefferson, Mobile, Morgan and Shelby Counties had significant numbers of high ozone days.⁸ The Birmingham-Hoover-Talladega Metropolitan Statistical Area (MSA) still ranks 17th for People at Risk in 25 U.S. Cities Most Polluted by Year-Round Particle Pollution.⁹

³ Sloyan, Patrick J. *The day they shut down Birmingham*. (1972). *The Washington Monthly*, 41-51. Retrieved from <http://www.unz.org/Pub/WashingtonMonthly-1972may-00041>

⁴ *Id.*

⁵ For 2014, The North Birmingham monitor (AQS ID-073-0023) shows higher levels than all other monitors throughout the Birmingham-Hoover MSA for PM_{2.5} (the Sloss Shuttlesworth monitor, AQS ID 01-073-6004 that monitors PM_{2.5} is also located in the North Birmingham community and shows levels higher than the other monitors for as well), SO₂, 8 hour ozone, and 24 hour PM₁₀ (measured from the Sloss Shuttlesworth monitor). U.S. EPA AirData, <http://www.epa.gov/airdata> (last visited Jun. 26, 2015).

⁶ National Resource Defense Council, "Toxic Power" at 16. Retrieved from http://docs.nrdc.org/air/files/air_11072001a.pdf

⁷ Gadsden, Alabama was a major industrial hub throughout much of the 20th century. Goodyear Tire and Rubber, Republic Steel and Gulf Steel all operated within Gadsden. Etowah County, where Gadsden sits, historically was designated as nonattainment for the 24 hour PM_{2.5} standard (Jefferson was also nonattainment). Historically, Jefferson, Shelby and a small portion of Walker County were designated as nonattainment for the annual PM_{2.5} standard. As of 2013, Jefferson, Shelby and Walker County reached attainment status for PM_{2.5} and ozone (Etowah County is listed as unclassified). Alabama Partners for Clean Air, *What's Our Air Quality Status*, <http://alabamacleanair.org/air-quality/about-air-quality/> (last visited Jun. 29, 2015); 40 C.F.R. § 81.301 (2012).

⁸ Jefferson County had 29 orange days and 1 red day; Madison County had 6 orange days; Mobile County had 3 orange days; Morgan County had 3 orange days; Shelby County had 8 orange days. American Lung Association, *State of the Air 2015* (2015) http://www.stateoftheair.org/2015/assets/ALA_State_of_the_Air_2015.pdf (last visited Jun. 29, 2015).

⁹ *Id.*

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Accordingly, where Alabama, and especially the Birmingham-Hoover-Talladega MSA, has both historical air quality issues and continues to experience poor air quality, Alabama's Ambient Air Monitoring Plan for 2015 should seek to further improve Alabama's air quality.

B. As proposals to the National Ambient Air Quality Standards (NAAQS) strengthen standards, Alabama should be planning to implement more, not less monitoring

On December 17, 2014, the EPA proposed to make new revisions to the primary and secondary NAAQS standards for ozone to provide requisite protection for public health and welfare.¹⁰ EPA proposes to revise the standards within the range of .065 and .070 ppm.

As previously mentioned, Birmingham, Alabama, has a history of noncompliance with the NAAQS¹¹ that has not only affected the health of Birmingham's citizens, but also Birmingham's economic development. According to the Alabama Partners for Clean Air, Birmingham's non-attainment designation over the past two decades cost the area "15 major manufacturing facilities, 11,000 jobs and nearly \$5 billion worth of investment" in the 1990s alone.¹² The Birmingham metro area reached attainment in 2013 under the 75 parts per billion (ppb) standard. In 2014, ozone concentration data for the Birmingham metro area showed that the region would be in attainment for even a 70 ppb standard. However, should EPA promulgate its final rule for the lower end of the range at 65 ppb, Birmingham would likely be out of attainment again.

GASP recognizes that even if the final rule sets a standard of .065 ppm, Alabama will have several years to comply with the new standards. Although state agencies cannot yet plan for a rule that is not yet final, they should be creating long term plans in anticipation of a stronger NAAQS standard for ozone. Especially where several parts of Alabama still experience a significant number of ozone days, and such air pollution has historically negatively affected such regions, state agencies should be planning for more, not less monitoring as regulations tighten.

¹⁰ National Ambient Air Quality Standards for Ozone, 79 Fed. Reg. 75233 (December 17, 2014) (to be codified at 40 C.F.R. pts. 50, 51, 52 et al.)

¹¹ In 2013, Birmingham was classed by the EPA as being "in attainment" of the six primary air quality standards measured by federal officials. Raines, Ben. "Birmingham meets federal air quality standards for the first time in 30 years (updated)." *AL.com*. 2013, January 9. http://blog.al.com/live/2013/01/birmingham_meets_federal_air_q.html (last visited Jun. 29, 2015).

¹² Alabama Partners for Clean Air. "What is our air quality status?" <http://alabamacleanair.org/air-quality/about-air-quality/> (last visited Jun. 29, 2015).

III. Comments on each agency's annual review of their portion of the current ambient air quality network and proposed network to be implemented during [2015]¹³

A. ADEM

1. The Mobile MSA will go from having a monitoring site for PM₁₀ to no longer having a site that monitors PM₁₀.

In the State of Alabama Ambient Air Monitoring Plan for 2014, ADEM stated that “[d]ue to problems with the infrastructure at the WKRG site and the expense [...] required to maintain the site, ADEM has requested to close this site in a March 7, 2014 letter to Region 4.”¹⁴ In the Plan for 2015, ADEM confirms that the WKRG PM₁₀ monitor was closed on December 29, 2014. PM₁₀ levels for the WKRG monitor for 2010-2014 are shown in **TABLE 1** below:

TABLE 1: PM₁₀ 24 HOUR-WKRG MONITOR¹⁵

Year	Monitor Number	First Max	Second Max
2014	3	32	32
	4	34	31
2013	3	45	40
	4	45	40
2012	3	42	34
	4	36	35
2011	3	59	57
	4	59	58
2010	3	76	53
	4	77	54

GASP recognizes that the site-level statistics above are within the NAAQS standard.¹⁶ GASP also recognizes that under the NAAQS standards for PM₁₀¹⁷ the Mobile MSA is required to have 0-1 monitor. As such, ADEM is in compliance with NAAQS even where it has closed the Mobile MSA's only PM₁₀ monitor.

However, GASP maintains that an ambient air monitoring plan that adequately protects human health will seek to implement more, not less monitoring. Accordingly, it can be argued that the Mobile MSA suffers a detriment where they once had a site monitoring PM₁₀ and as of 2014 they no

¹³ The “Overview of Alabama’s Air Monitoring Network” section of the Plan refers to “a proposed network to be implemented during 2014.”

¹⁴ ADEM, State of Alabama Ambient Air Monitoring 2014 Consolidated Network Review (2014), <http://adem.alabama.gov/programs/air/airquality/2015AmbientAirPlan.pdf> at 17 (last visited Jun. 30, 2015) at 21.

¹⁵ U.S. EPA AirData, <http://www.epa.gov/airdata> (last visited Jun. 26, 2015).

¹⁶ 150µg/m³ under 40 C.F.R. § 50.6

¹⁷ See 40 C.F.R. § 58, APPENDIX D

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longer have any such air quality monitor. GASP would encourage ADEM to find another site in the Mobile MSA without infrastructure problems and begin monitoring for PM₁₀ once more as part of next year's Ambient Air Monitoring Plan.

2. Another PM_{2.5} monitor should be installed in Pelham to account for primary PM and evenly distribute monitoring geographically throughout the Birmingham-Hoover MSA.

Interstate 65 connects about 367 miles of traffic in Alabama.¹⁸ From downtown Birmingham to Pelham, I-65 carries 6 lanes, which often generate heavy traffic.¹⁹ PM_{2.5} is primary PM, which is often emitted from cars and trucks. Pelham High School is located about five and a half miles from I-65 (as seen in the map below).

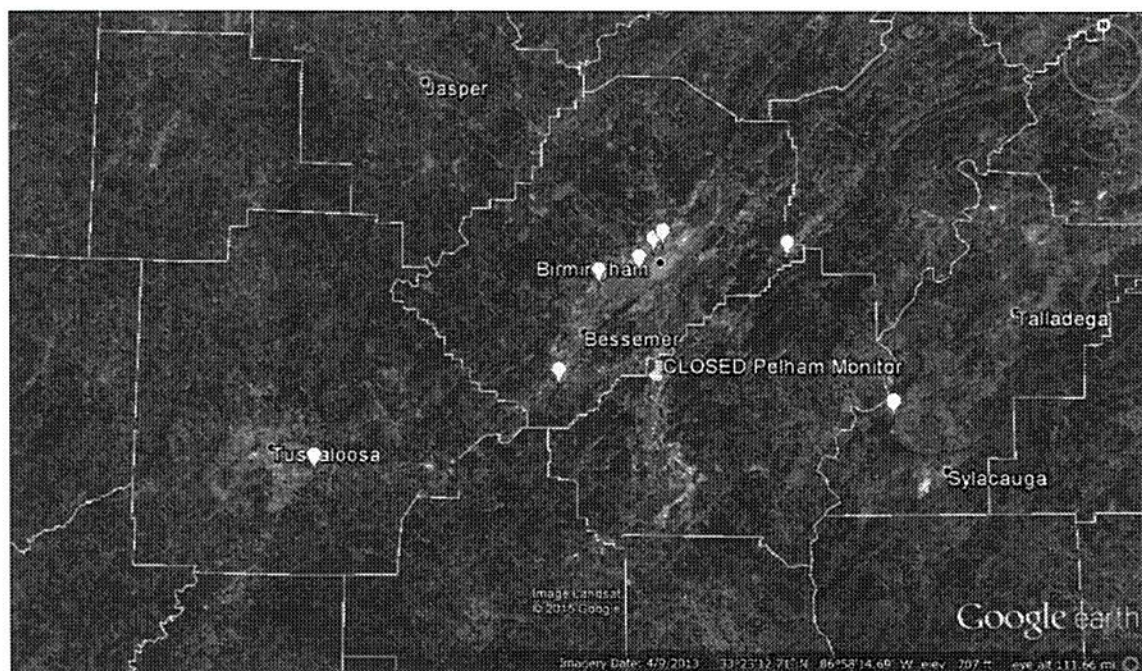


Because Pelham is in close proximity to I-65, which contains heavy traffic and thus is a source of PM_{2.5} emissions, it would be prudent for ADEM to find another location for the Pelham monitor. Although the Pelham monitor has the lowest design value for the Birmingham-Hoover MSA, when considering the particle pollution that results from a heavily traveled interstate, Pelham would benefit from ADEM continuing to monitor PM_{2.5}.

¹⁸ Federal Highway Administration, Route Log and Finder List-Table 1-Main Routes (2014), <http://www.fhwa.dot.gov/reports/routefinder/table1.cfm> (last visited Jun. 29, 2015).

¹⁹ *Id.*

Similarly, the closure of the Pelham monitor leaves a geographical gap in PM_{2.5} monitoring for the Birmingham-Hoover MSA (see the map below).



ADEM and JCDH can more fully assess the PM_{2.5} emission levels for the entire Birmingham-Hoover MSA when all areas are adequately monitored. Accordingly, in order to ensure a full assessment of the air quality in the Birmingham-Hoover MSA, ADEM should relocate the Pelham monitor.²⁰

B. JCDH

1. Where the mineral wool piles (MWPs) still have not been removed, it would be imprudent for JCDH to discontinue monitoring for CO at the Sloss Shuttlesworth monitor

In the Carbon Monoxide (CO) Network section of the Plan, JCDH “is proposing to discontinue monitoring for CO at the Sloss Shuttlesworth site due to low concentrations and the facility shutdown of the source (in 1999), Walter Energy Mineral Wool facility that was the primary contributor to and reason for monitoring CO at the Sloss Shuttlesworth site. JCDH installed the CO monitor in 1996 as a fenceline site for the mineral wool facility.”²¹

Walter Coke has been in operation since 1920 where the primary product is coke, however slag fibers (e.g. mineral wool) were produced until

²⁰ See generally Regional Planning Commission of Greater Birmingham, 2014 Air Quality Determination Report (2015), <http://www.rpcgb.org/transportation/regional-transportation-plan/air-quality-conformity/> (last visited Jun. 29, 2015).

²¹ ADEM, State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review (2015), <http://adem.alabama.gov/programs/air/airquality/2015AmbientAirPlan.pdf> at 17 (last visited Jul. 2, 2015) at 17.

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the facility closed in 1999.²² Walter Coke reported in a 1989 Administrative Order that the MWP's contain mineral wool, shot, coke and flue dust from mineral wool production.²³ To date, the MWP's have not been removed.

The CO levels reported by the Sloss Shuttlesworth monitor do not support JCDH's reasoning for discontinuing monitoring. By referencing **TABLE 2**, it is clear that CO levels were quite high, sometimes even exceeding NAAQS standards²⁴ even after the mineral wool facility closed in 1999. Specifically, in 2001, two years after the facility closed, the Sloss Shuttlesworth monitor showed exceedances for both 1 Hour and 8 Hour duration descriptions. As recently as 2008 the Sloss Shuttlesworth monitor showed an exceedance of the NAAQS standards for the 8 hour duration description. Where the Sloss Shuttlesworth monitor shows exceedances of CO, sometimes greater than those in the 1996-1999 period in which the mineral wool facility was operating, JCDH's reasoning for closing the CO monitor is suspect.

Additionally, where the MWP's have not been removed, it would be imprudent to discontinue CO monitoring at the Sloss Shuttlesworth monitor. In July of 2013, EPA suggested that on March 24, 2014 an outline of potential cleanup options for the MWP's could be expected²⁵. However, GASP is unaware of any such cleanup plans for the MWP's. Accordingly, it is reasonable for GASP to assume that cleanup or removal of the MWP's could occur in the near future. JCDH's proposal to discontinue the CO monitor prior to the cleanup or removal of the MWP's, which are the byproduct of the facility faulted for the CO exceedances, is both premature and imprudent. GASP contends that the Sloss Shuttlesworth monitor should continue to monitor CO, both because the MWP's have not been removed and the reasoning for discontinuing CO monitoring is not sound.

²² Booz Allen Hamilton, Sample analysis report revision 5: Sample collection and analysis at the Walter Coke facility (2013), http://www2.epa.gov/sites/production/files/2015-04/documents/walter_mineral_wool_piles.pdf (last visited Jul. 2, 2015).

²³ *Id.*

²⁴ 40 C.F.R. § 50.8 (2015).

²⁵ EPA, Quarterly Progress Newsletter, "Facility cleanup: Resource Conservation and Recovery Act Corrective Action Program, Walter Coke, North Birmingham, AL." Vol. 1, http://www2.epa.gov/sites/production/files/2014-04/documents/rcra-wc-1-newsletter-july-2013-final_0.pdf (last visited Jun. 26, 2015).

TABLE 2: CO-SLOSS SHUTTLESWORTH MONITOR²⁶

YEAR	DURATION	FIRST MAX	SECOND MAX
2014	1 Hour	1.5	1.2
	8 Hour	.8	.8
2013	1 Hour	1.7	1.5
	8 Hour	.8	.7
2012	1 Hour	2.9	1.4
	8 Hour	1.3	1
2011	1 Hour	2.9	1.4
	8 Hour	1	.9
2010	1 Hour	1.8	1.7
	8 Hour	1.2	1.1
2009	1 Hour	15.1	12.1
	8 Hour	7	6.7
2008	1 Hour	19.6	15.9
	8 Hour	10.7	8.1
2007	1 Hour	20	18.7
	8 Hour	9	8.6
2006	1 Hour	35.3	26.3
	8 Hour	9.6	9.5
2005	1 Hour	22.3	20.9
	8 Hour	9	8.8
2004	1 Hour	15.1	15
	8 Hour	8.3	8.2
2003	1 Hour	9.6	9.1
	8 Hour	6.4	4.5
2002	1 Hour	18.5	17.7
	8 Hour	12.3	11.7
2001	1 Hour	36.9	33.5
	8 Hour	25.1	24.3
2000	1 Hour	27.8	23.6
	8 Hour	16.4	16.3
1999	1 Hour	33.8	32.3
	8 Hour	26.3	19.8
1998	1 Hour	31.6	23.4
	8 Hour	17.1	12.1
1997	1 Hour	26.6	
	8 Hour	13.1	9.5
1996	1 Hour	18.8	17.8
	8 Hour	12.2	10.5

²⁶ U.S. EPA AirData, <http://www.epa.gov/airdata> (last visited Jun. 26, 2015).

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2. Where the EPA is still acting under its CERCLA authority at the 35th Avenue Site and the Sloss Shuttlesworth monitor collected data for only two years, JCDH should continue monitoring for PM_{2.5} at this site.

In APPENDIX A of the Plan, JCDH states that there are no plans to continue monitoring for PM_{2.5} at the Sloss Shuttlesworth site. JCDH reasons that “this monitor was operated as a special purpose monitor for approximately one year *to address community concerns*. Sampling was completed and compared to concentrations at the North Birmingham site. Concentrations were relatively similar.”²⁷

As previously mentioned, the Northern Birmingham Communities suffer a disproportionate share of air pollution in the Birmingham-Hoover MSA. Under its CERCLA authority, the EPA began a Site Inspection in 2009 and refers to the area as “the 35th Avenue Site.” The 35th Avenue site is a mixed industrial and residential area of Birmingham, Alabama. “Since 1886 the area has been home to 20 foundries and kilns; seven coal, coke or byproducts facilities[...]. By 1981, 20[%] of the land area was devoted to large industrial plants.”²⁸ In the HRS Documentation Record, the EPA states that “[a]ir is the primary source of deposition within the 35th Avenue site [area of observed contamination] from smokestacks and windblown particles from process fires and other stockpiled material.”²⁹ Sampling in the 35th Avenue study area showed the presence of lead, arsenic and BaP, which is most likely due to emissions from facility stacks.³⁰

It is understandable that the Northern Birmingham communities were concerned about PM_{2.5} emissions and thus requested that JCDH’s Environmental Health Director include monitoring for PM_{2.5} at the Sloss Shuttlesworth site. Where EPA recommended listing the 35th Avenue Site on the National Priorities List (NPL),³¹ it does not compute that JCDH seeks to discontinue monitoring for criteria pollutants. Where the EPA is still acting under its CERCLA authority, and has recommended that the 35th Avenue Site be listed as a Superfund site, it would be imprudent, and bordering on negligent, to discontinue monitoring for criteria air pollutants at the 35th Avenue Site.

²⁷ ADEM, State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review (2015), <http://adem.alabama.gov/programs/air/airquality/2015AmbientAirPlan.pdf> at 17 (last visited Jul. 2, 2015) at 53. (emphasis added).

²⁸ EPA, HRS Documentation Record, <http://www.epa.gov/superfund/sites/docrec/pdoc1897.pdf> (last visited Jun. 29, 2015) at 16. (emphasis added).

²⁹ *Id.* at 16 (emphasis added).

³⁰ *Id.* at 43.

³¹ National Priorities List, Proposed Rule No. 61, 79 Fed. Reg. 183, 56540 (proposed Sept. 22, 2014) (to be codified at 40 C.F.R. pt. 300).

Moreover, as seen in **TABLE 3** below, the 98th percentile values for the Sloss Shuttlesworth and North Birmingham sites differ. NAAQS standards for PM_{2.5} are averaged over three years.³² The Sloss Shuttlesworth site contains data for only two years: 2013 and 2014. Accordingly, JCDH cannot even assess the PM_{2.5} standard because there is not sufficient data for a third year of measurements where the PM_{2.5} monitor will be discontinued for 2015. At the very least, especially considering monitoring for PM_{2.5} at the Sloss Shuttlesworth site occurred to address community concerns, the monitor should collect emissions data for *at least* three years. GASP encourages JCDH to continue monitoring for PM_{2.5} at the Sloss Shuttlesworth site.

TABLE 3: 24 HOUR PM_{2.5}-SLOSS SHUTTLESWORTH AND NORTH BIRMINGHAM MONITORS³³

Year	Monitor	98 th Percentile	3 year average
2014	Sloss Shuttlesworth	23	
	North Birmingham	26	
2013	Sloss Shuttlesworth	24	
	North Birmingham	20	
2012	Sloss Shuttlesworth	N/A	
	North Birmingham	23	
	Sloss Shuttlesworth		23.5*
	North Birmingham		23

*3 year average not available for Sloss Shuttlesworth site because monitoring began in 2013.

IV. Conclusion

GASP maintains that a comparison to the past is the incorrect standard. Although air quality has improved in Alabama, we still have air quality issues that adversely affect the health of Alabama citizens. Especially when considering that regulations for air quality are tightening, Alabama agencies charged with protecting our air and public health should be calling for more, not less monitoring. Accordingly, GASP encourages the state agencies—ADEM, JCDH and HDNREM—to take seriously our concerns and recommendations. A comprehensive Ambient Air Monitoring Plan will improve air quality and thus the health of Alabamians.

³² 40 C.F.R. § 50.13 (2015).

³³ U.S. EPA AirData, <http://www.epa.gov/airdata> (last visited Jun. 26, 2015).



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State of Alabama Ambient Air Monitoring 2015 Consolidated Network Review



Table of Contents

Table of Contents.....	
Definitions and Acronyms.....	
Introduction.....	5
Public Review and Comment.....	5
Overview of Alabama's Air Monitoring Network.....	6
Summary of findings of the network review	6
Population and CBSA.....	10
Types of Monitoring Stations	15
PAMS.....	15
SLAMS	15
STN	15
Supplemental Speciation.....	15
NCore.....	15
CASTNET.....	15
Alabama's SLAMS by Pollutant	16
Lead Network.....	16
Carbon Monoxide (CO) Network	17
Nitrogen Dioxide (NO ₂) Network.....	18
Sulfur Dioxide (SO ₂) Network.....	19
PM ₁₀ Network	21
Ozone Network	23
Ozone Monitoring requirements for Alabama MSAs.....	25
PM _{2.5} Network	27
Quality Assurance.....	32
Monitoring Equipment Evaluation	32
NETWORK DESCRIPTIONS	33
ADEM AIR MONITORING NETWORK DESCRIPTION	34
PM ₁₀	35
Lead.....	35
PM 2.5	36
PM 2.5 continued	37
OZONE.....	38
SO ₂	39
JCDH AIR MONITORING NETWORK DESCRIPTION	40
Ozone.....	41
SO ₂	42
NO _y	43
NO ₂	43
Low Volume PM ₁₀	44
Continuous PM ₁₀	45
Lead.....	45
PM _{2.5}	46
Continuous PM _{2.5}	47
PM ₁₀ IMPROVE.....	47

PM _{2.5} IMPROVE Speciation.....	48
PM _{2.5} STN Speciation.....	48
RadNet	49
HUNTSVILLE AIR MONITORING NETWORK DESCRIPTION	50
APPENDIX A	51
Jefferson County Department Of Health (JCDH).....	51
Jefferson County Department Of Health (JCDH).....	52
Annual Air Monitoring Network Plan	52
Summary of Changes to the Network.....	52
Continuous PM _{2.5} SPM (Special Purpose Monitors).....	54
Network Review Findings	59
APPENDIX B	60
Huntsville Department of Natural Resources and Environmental Management (HDNREM).....	60
NCore Ambient Air Monitoring Stations	61
SLAMS (State and Local Air Monitoring Stations)	61
SPM (Special Purpose Monitors).....	63
Network Review Findings	64
APPENDIX C	65
Maps.....	65
ADEM Monitoring Sites.....	66
Jefferson County	67
City of Huntsville.....	68

List of Tables

Table 1 - 2014 Alabama Monitoring Network	8
Table 2 – 2012 Estimated MSA Population	10
Table 3- Alabama CBSAs.....	12
Table 4 - JCDH CO Monitoring sites	17
Table 5 - CBSA's PWEI and number of monitors required	20
Table 6 - APPENDIX D TO PART 58, PM ₁₀ MINIMUM MONITORING REQUIREMENTS	21
Table 7 - APPENDIX D TO PART 58, SLAMS MINIMUM O ₃ MONITORING REQUIREMENTS.....	23
Table 8- Alabama MSAs with Ozone Monitoring Sites and current Design Value.....	24
Table 9 - APPENDIX D TO PART 58, PM _{2.5} MINIMUM MONITORING REQUIREMENTS	27
Table 10- MSAs with PM _{2.5} Monitoring Sites and current Design Value.....	28

List of Figures

Figure 1 – US CBSAs and Counties as of February 2013	13
Figure 2-Alabama with MSAs as of 2013	14

Definitions and Acronyms

AAQM	ambient air quality monitoring
AAQMP	Ambient Air Quality Monitoring Plan
ADEM	Alabama Department of Environmental Management
Appendix D	Volume 40, Code of Federal Regulations, part 58, Appendix D
AQS	air quality system
Avg	average
Bham	Birmingham
CBSA	Core Based Statistical Area
CFR	<i>Code of Federal Regulations</i>
CO	Carbon Monoxide
CSA	Consolidated Statistical Area
EPA	Environmental Protection Agency
FEM	Federal Equivalent Method
FRM	Federal Reference Method
HDNREM	Huntsville Division of Natural Resources and Environmental Management
hr	hour
hi-vol	high-volume PM ₁₀ sampler
JCDH	Jefferson County Department of Health
Low-vol	low-volume particulate sampler
m ³	cubic meter
min	minute
ml	milliliter
MSA	metropolitan statistical area
NAAQS	national ambient air quality standard
NCore	National core monitoring (multi-pollutant)
O ₃	ozone
PAMS	photochemical air monitoring station
Pb	lead
PM	particulate matter
PM _{2.5}	particulate matter less than 2.5 micrometers diameter
PM ₁₀	particulate matter less than 10 micrometer diameter
PM _{10-2.5}	particulate matter less than 10 microns but greater than 2.5 microns
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
SLAMS	state and local air monitoring station
SO ₂	sulfur dioxide
SPM	special purpose monitor
STN (PM _{2.5})	Speciation Trends Network
TEOM	Tapered Element Oscillating Microbalance (Rupprecht and Patashnick Co.)
TPY	Tons per Year
TSP	total suspended particulate
URG	URG-3000N PM _{2.5} Speciation monitoring carbon-specific sampler
USEPA	United States Environmental Protection Agency
° C	degree Celsius
µg/m ³	micrograms (of pollutant) per cubic meter (of air sampled)

Introduction

In October 2006, U.S.EPA issued final Federal Regulations (40 CFR 58) concerning state and local agency ambient air monitoring networks. These regulations require states to submit an annual monitoring network review to U.S.EPA. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system and to list any changes that are proposed to take place to the current network during 2015.

Public Review and Comment

The annual monitoring network review must be made available for public inspection for thirty (30) days prior to submission to U.S.EPA. For 2015, this document was placed on ADEM's website on June 2 to begin a 30 day public review period. This document can be accessed at the following link:

<http://adem.alabama.gov/newsEvents/publicNotices.cnt>
then choose this document.

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Overview of Alabama's Air Monitoring Network

Monitors in the state of Alabama are operated for a variety of monitoring objectives. These objectives include determining whether areas of the state meet the National Ambient Air Quality Standards (NAAQS), for public information (such as, participation in EPA's AirNow program), Air Quality Index (AQI) reporting for larger Metropolitan Statistical Areas MSAs, for use in Air Quality models and to provide data to Air Quality Researchers. Alabama monitors the six (6) criteria pollutants which have NAAQS identified for them; CO, Lead, NO₂, Ozone, particulate matter (PM₁₀ and PM_{2.5}), and SO₂. There are other non-criteria pollutants that are also monitored for special purposes (such as PM_{2.5} speciated compounds). In addition meteorological data are also collected to support the monitoring and aid in analysis of the data.

In Alabama the air quality surveillance system is operated by the state environmental agency and two local programs. The agencies are the Alabama Department of Environmental Management (ADEM), the Jefferson County Department of Health (JCDH), and the Huntsville Department of Natural Resources and Environmental Management (HDNREM). Each of these agencies has performed the required annual review of their portion of the current ambient air quality network and developed a proposed network to be implemented during 2014. This document is a compilation of the reports from each agency.

Currently, the Air Quality Index (AQI) is reported for Huntsville, Birmingham, Mobile, Montgomery and Phenix City on the Internet at the sites listed below.

ADEM	http://www.adem.state.al.us/programs/air/airquality/ozone/historical.cnt
JCDH	http://www.jcdh.org/EH/AnR/AnR03.aspx
HDNREM	http://www.hsvcity.com/NatRes/Pollen/polindex.htm#DAQ

An overview of the 2014 Alabama Monitoring Network can be seen in Table 1.

Summary of findings of the network review

A national review was conducted by the US EPA of the Chemical Speciation Network. During this review the PM 2.5 speciation monitors in Montgomery and Huntsville were determined to be of low value. EPA chose to discontinue funding these monitors. ADEM and Huntsville closed these monitors in January of 2015.

ADEM

The owner of the building where the Pelham (AQS ID: 01-117-0006) PM 2.5 monitor is located has asked ADEM to remove that monitor from the roof of their building. ADEM has been unable to locate an acceptable site in the same vicinity so this site will be closed in June 2015. This monitor is within the Birmingham MSA and has the lowest design value for the area. The MSA will still meet the minimum required number of PM 2.5 monitors.

In the 2014 Annual Monitoring Plan ADEM requested to discontinue PM 10 monitoring at the WKRG site in Mobile, AL. ADEM closed this site as of December 29, 2014.

HDNREM

There are no changes planned for the Huntsville Air Monitoring Network.

JDCH

Summary of changes for JCDH in 2014

- Addition of Near Road Monitoring Site at Arkadelphia Road
- Discontinued monitoring for Low Vol PM10 at Tarrant, Fairfield, Sloss Shuttlesworth and McAdory.

Proposed changes for 2015

- Replacement of shelters at Wylam and Tarrant
- Discontinuation of PM2.5 and CO at Sloss Shuttlesworth
- Variance/Exclusion request from using the PM_{2.5} continuous FEM data at the North Birmingham site for NAAQS purposes

Table 1 - 2014 Alabama Monitoring Network

Site Common Name	AQS ID	Ozone	PM2.5	PM 2.5 collocated	PM2.5 Spec.	BAM (Cont. PM2.5)	TEOM (Cont. PM2.5)	PM 10 LoVol	PM10 LoVol Collocated	PM10	PM10 collocated	PM 10 Continuous	Lead	Lead Collocated	Lead-PM10	SO2	NO2	NOy	CO
JCDH Sites																			
North Birmingham (NCore)	01-073-0023	x	x	x	x	x		x	x			x	x	x	x	x	x	x	x
Fairfield	01-073-1003	x														x			x
McAdory School	01-073-1005	x	x	x			x												
Leeds Elem. School	01-073-1010	x	x	x			x	x											
Wylam	01-073-2003		x	x	x		x	x	x			x							
Hoover	01-073-2006	x					x												
Corner High School	01-073-5003	x					x												
Tarrant Elem. School	01-073-6002	x										x							
Sloss Shuttlesworth	01-073-6004											x							x
Near Road Site	01-073-2059		x														x		x
ADEM Sites																			
Fairhope	01-003-0010	x	x																
Ashland	01-027-0001		x																
Muscle Shoals	01-033-1002	x	x																
Crossville	01-049-1003		x																
DBT	01-051-0001	x																	
Gadsden - CC	01-055-0010		x			x													
Southside	01-055-0011	x																	
Dothan -CC	01-069-0003		x																
Dothan	01-069-0004	x																	
Mobile - Chickasaw	01-097-0003	x	x			x										x			
Mobile-WKRG	01-097-0016									c	c								
Mobile - Bay Road	01-097-2005	x																	
Montgomery - MOMS	01-101-1002	x	x	x	c	x				x	x								
Decatur	01-103-0011	x	x			x													
Phenix City - Downtown	01-113-0001		x	x	x		x												
Phenix City - Ladonia	01-113-0002	x																	
Helena	01-117-0004	x																	
Pelham	01-117-0006		x																
Ward, Sumter Co.	01-119-0003	x				x													
Childersburg	01-121-0002		x																
Tuscaloosa - VA Hospital	01-125-0004		x			x													
Duncanville, Tuscaloosa	01-125-0010	x																	
Troy	01-109-0003												x	x					
HDNR Sites																			
Fire station #10 (Pulaski Pike)	01-089-0002									x									
Madison Street - Garage	01-089-0003									x									
Fire station #7 (S. Memor. Pwy.)	01-089-0004									x									
Huntsville Old Airport	01-089-0014	x	x	x	x		x			x	x								
Huntsville Capshaw Rd	01-089-0022	x																	

A17= to operate 2017

C= closed

Network Plan Description

As per 40 CFR Part 58.10, an annual monitoring network plan which provides for the establishment and maintenance of an air quality surveillance system consisting of the air quality monitors in the state, is required to be submitted by all states to U.S.EPA.

Specifically §58.10 (a) requires for each existing and proposed monitoring site:

1. A statement of purpose for each monitor.
2. Evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of 40 CFR Part 58, where applicable.
3. Proposals for any State and Local Air Monitoring station (SLAMS) network modifications.

§58.10 (b) requires the plan must contain the following information for each existing and proposed site:

1. The Air Quality System (AQS) site identification number.
2. The location, including street address and geographical coordinates.
3. The sampling and analysis method(s) for each measured parameter.
4. The operating schedules for each monitor.
5. Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.
6. The monitoring objective and spatial scale of representativeness for each monitor.
7. The identification of any sites that are suitable and sites that are not suitable for comparison against the annual PM_{2.5} NAAQS as described in §58.30.
8. The Metropolitan Statistical Area (MSA), Core Based Statistical Area (CBSA), Combined Statistical Area (CSA) or other area represented by the monitor.
9. The designation of any Pb monitors as either source-oriented or non-source-oriented according to Appendix D to 40 CFR part 58.
10. Any source-oriented monitors for which a waiver has been requested or granted by the U.S.EPA Regional Administrator as allowed for under paragraph 4.5(a)(ii) of Appendix D to 40 CFR part 58.
11. Any source-oriented or non-source-oriented site for which a waiver has been requested or granted by the U.S.EPA Regional Administrator for the use of Pb-PM₁₀ monitoring in lieu of Pb-TSP monitoring as allowed for under paragraph 2.10 of Appendix C to 40 CFR part 58.

Monitoring Requirements

Appendix A of 40 CFR Part 58 outlines the Quality Assurance Requirements for SLAMS, SPMs, and PSD Air Monitoring. It details the calibration and auditing procedures used to collect valid air quality data, the minimum number of collocated monitoring sites, the calculation used for data quality assessments, and the reporting requirements. All sites in Alabama operate following the requirements set forth in this appendix.

Appendix C of 40 CFR Part 58 specifies the criteria pollutant monitoring methods which must be used in SLAMS and NCore stations. All criteria pollutant monitoring in Alabama follows the methods specified in this appendix.

Appendix D of 40 CFR Part 58 deals with the network design criteria for ambient air quality monitoring. The overall design criteria, the minimum number of sites for each parameter, the type of sites, the spatial scale of the sites, and the monitoring objectives of the sites are detailed. In designing the air monitoring network for Alabama, the requirements of this appendix were followed. The specifics for each pollutant network are in their individual chapters.

Appendix E of 40 CFR Part 58 deals with the placement of the monitoring probe, its spacing from obstructions and what materials the probe can be made of. All monitors operated in Alabama meet Appendix E criteria.

Population and CBSA

Alabama has a population of 4,849,377 of which 3,813,080 is located in the 13 MSAs listed in Table 2.

Table 2 – 2014 Estimated MSA Population

Metropolitan Statistical Areas	
Anniston-Oxford, AL	115,916
Auburn-Opelika, AL	154,255
Birmingham-Hoover, AL	1,263,730
Columbus, GA-AL	314,005
Daphne-Fairhope-Foley, AL	200,111
Decatur, AL	153,084
Dothan, AL	148,095
Florence-Muscle Shoals, AL	147,639
Gadsden, AL	103,531
Huntsville, AL	441,086
Mobile, AL	415,123
Montgomery, AL	373,141
Tuscaloosa, AL	237,761

Minimum monitoring requirements vary for each pollutant and can be based on a combination of factors such as population, the level of monitored pollutants and Core Based Statistical Area (CBSA) boundaries as defined in the latest US Census information. The term "Core Based Statistical Area" (CBSA) is a collective term for both Metropolitan Statistical Areas (MSA) and Micropolitan Statistical Areas (μSA).

In February 2013 the Office of Management and Budget issued a Bulletin on the "Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These Areas". Based on the 2010

Census some changes were made to certain statistical areas listed above. The major changes that affected Alabama were:

- The Daphne-Fairhope-Foley, AL area was upgraded to a MSA from a μ SA.
- The boundary of the Tuscaloosa MSA changed. Pickens County was added and Greene County was removed.
- The Enterprise-Ozark, AL μ SA was split into the Enterprise, AL μ SA and Ozark, AL μ SA.

Table 3 List the CBSAs in Alabama along with the names of the counties included in that area, and the 2012 estimated population.. The Metropolitan Statistical Areas are listed first by highest population, then Micropolitan Statistical Areas are listed by highest population.

Table 3- Alabama CBSAs

CBSA Title	Metropolitan/Micropolitan Statistical Area	County/County Equivalent	2014 CBSA Population Estimate
Anniston-Oxford-Jacksonville, AL	Metropolitan Statistical Area	Calhoun County	115916
Auburn-Opelika, AL	Metropolitan Statistical Area	Lee County	154255
Birmingham-Hoover, AL	Metropolitan Statistical Area	Bibb, Blount, Chilton, Jefferson, St. Clair, Shelby, Walker	1263739
Columbus, GA-AL	Metropolitan Statistical Area	Russell, Chattahoochee GA, Harris GA, Marion GA, Muscogee GA	314005
Daphne-Fairhope-Foley, AL	Metropolitan Statistical Area	Baldwin County	200111
Decatur, AL	Metropolitan Statistical Area	Lawrence, Morgan	153084
Dothan, AL	Metropolitan Statistical Area	Geneva, Henry, Houston	148095
Florence-Muscle Shoals, AL	Metropolitan Statistical Area	Colbert, Lauderdale	147639
Gadsden, AL	Metropolitan Statistical Area	Etowah County	103531
Mobile, AL	Metropolitan Statistical Area	Mobile County	415123
Huntsville, AL	Metropolitan Statistical Area	Limestone, Madison	441086
Montgomery, AL	Metropolitan Statistical Area	Autauga, Elmore, Lowndes, Montgomery	373141
Talladega-Sylacauga, AL	Micropolitan Statistical Area	Coosa, Talladega	92208
Albertville, AL	Micropolitan Statistical Area	Marshall County	94636
Cullman, AL	Micropolitan Statistical Area	Cullman County	81289
Enterprise, AL	Micropolitan Statistical Area	Coffee County	50909
Ozark, AL	Micropolitan Statistical Area	Dale County	49484
Scottsboro, AL	Micropolitan Statistical Area	Jackson County	52665
Selma, AL	Micropolitan Statistical Area	Dallas County	41711
Tuscaloosa, AL	Metropolitan Statistical Area	Hale, Pickens, Tuscaloosa	237761
Troy, AL	Micropolitan Statistical Area	Pike County	33389

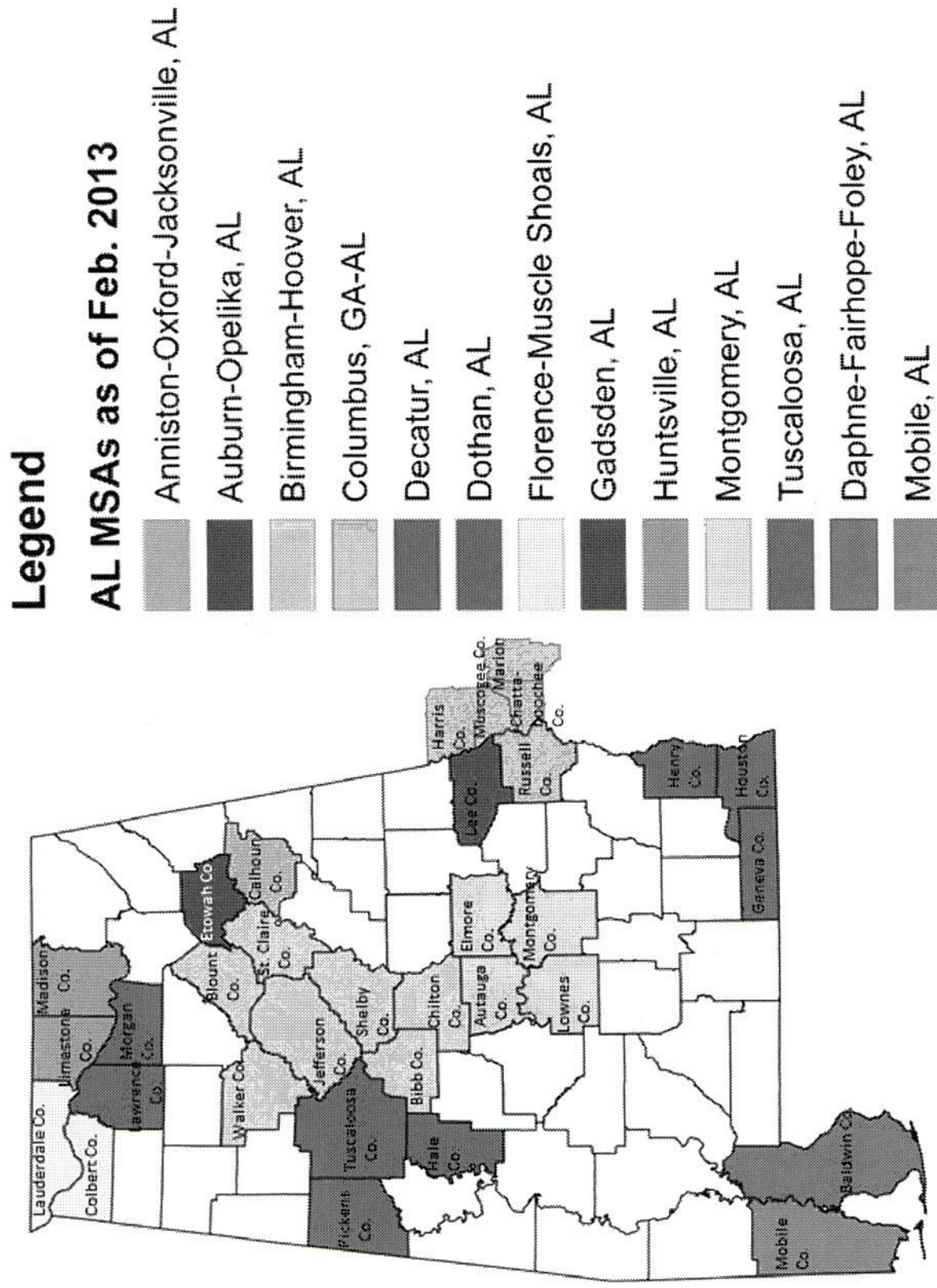
Figure 1 – US CBSAs and Counties as of February 2013

Metropolitan and Micropolitan Statistical Areas of the United States and Puerto Rico

February 2013



Figure 2-Alabama with MSAs as of 2013



Types of Monitoring Stations

PAMS – *Photochemical Assessment Monitoring Station*: Sites established to obtain more comprehensive data of areas with high levels of ozone pollution by also monitoring NO_x and VOCs. **PAMS monitoring is not required in the state of Alabama.**

SLAMS - *State or Local Ambient Monitoring Station*: The SLAMS make up the ambient air quality monitoring sites that are primarily needed for NAAQS comparisons.

These will be described in detail by pollutant and Monitoring Agency later.

STN – *PM_{2.5} Speciation Trends Network*: A PM_{2.5} speciation station designated to be part of the speciation trends network. This network provides chemical species data of fine particulates. **There is currently 1 STN site located in Alabama at the North Birmingham site (01-073-0023).**

Supplemental Speciation - Any PM_{2.5} speciation station that is used to gain supplemental data and is not dedicated as part of the speciation trends network.

There are currently 4 PM_{2.5} supplemental speciation sites located in Alabama. These are at Huntsville, Montgomery, Phenix City, and Wylam.

NCore – *National Core multi-pollutant monitoring station*: Sites that measure multiple pollutants at trace levels in order to provide support to integrated air quality management data needs. Each state is required to operate one NCore site. **The NCore site for Alabama is located in the Birmingham MSA at the North Birmingham site (01-073-0023) operated by JDCH. Additional information concerning this site can be found in the JCDH portion of the network description.**

CASTNET – *Clean Air Status and Trends Network*: is a national air quality monitoring network designed to provide data to assess trends in air quality, atmospheric deposition, and ecological effects due to changes in air pollutant emissions. CASTNET provides long-term monitoring of air quality in rural areas to determine trends in regional atmospheric nitrogen, sulfur, and ozone concentrations and deposition fluxes of sulfur and nitrogen pollutants in order to evaluate the effectiveness of national and regional air pollution control programs. Recently for Ozone CASTNET upgraded its equipment and its procedures to meet the same requirements as SLAMS. EPA-sponsored CASTNET ozone monitors have now become Part 58 compliant and therefore the data can be used for regulatory purposes. CASTNET Ozone data are now reported to AQS. There is one CASNET site in Alabama and it is operated by an EPA contractor. It is Sand Mountain (AQS ID 01-049-9991) in De Kalb county.

Alabama's SLAMS by Pollutant

Lead Network

In 2008, the US EPA revised the National Ambient Air Quality Standard for lead. The lead standard was lowered from 1.5 ug/m³ for a quarterly average to 0.15 ug/m³ based on the highest rolling 3 month average over a 3 year period. EPA set minimum monitoring requirements for source and population oriented monitoring. Source oriented monitoring is required near sources that have emissions greater than or equal to 1 ton per year. Population oriented monitoring is required for CBSAs greater than 500,000. In December of 2010 EPA revised the lead rule to include sources greater than ½ ton per year and stated that the Population oriented monitors would be located at the NCore sites.

Based on current emissions data or modeling ADEM has identified 1 source (Sanders Lead Co.) which emits greater than 1/2 ton of lead per year. ADEM has an existing monitor (AQS ID 01-109-0003) near that source. This monitor appears to be sited in the proper location and ADEM will continue to operate that monitor. To meet QA requirements, collocated Lead monitoring is also occurring at this site.

Based on current emission data, JCDH and the City of Huntsville have no sources that would require monitoring.

In addition, Pb monitoring is required at any NCore site in each CBSA with a population equal to or greater than 500,000 people. For the Birmingham-Hoover MSA, this site is being operated by JDCH and is located at the NCore (North Birmingham AQS ID 01-073-0023) site and has been collecting data since 12-29-2011.

In the 2010 rule revision (FR Vol. 75, No. 247, pg 81126-81138), EPA identified 15 airports across the nation that had a potential for lead emissions that could lead to a violation of the Lead NAAQS. At least one year of lead monitoring was required at each of these airports, and if the results were greater than 50% of the Lead NAAQS then the monitor would continue to be required. Alabama's Pryor Field Regional was one of these airports. Subsequently, monitoring was performed from 1/1/2013 through 12/31/2013. The results of this monitoring were less than 50% of the NAAQS so this site was closed after 2013.

Carbon Monoxide (CO) Network

On August 12, 2011 EPA issued a final rule that retained the existing NAAQS for Carbon Monoxide (CO) and made changes to the ambient air monitoring requirements for CO.

EPA revised the minimum requirements for CO monitoring by requiring CO monitors to be sited near roads in certain urban areas.

40 CFR Part 58 Appendix D, 4.2 details the requirements for CO monitoring.

4.2.1 General Requirements. (a) Except as provided in subsection (b), one CO monitor is required to operate collocated with one required near-road NO₂ monitor, as required in Section 4.3.2 of this part, in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near-road NO₂ monitor, only one CO monitor is required to be collocated with a near-road NO₂ monitor within that CBSA.

(b) If a state provides quantitative evidence demonstrating that peak ambient CO concentrations would occur in a near-road location which meets microscale siting criteria in Appendix E of this part but is not a near-road NO₂ monitoring site, then the EPA Regional Administrator may approve a request by a state to use such an alternate near-road location for a CO monitor in place of collocating a monitor at near-road NO₂ monitoring site.

EPA is specifying that monitors required in CBSAs of 2.5 million or more persons are to be operational by January 1, 2015. Those monitors required in CBSAs having 1 million or more persons are required to be operational by January 1, 2017.

Based on this, one CO monitor would be required to be collocated with the near road NO₂ monitoring road site in the Birmingham-Hover, AL CBSA and operational by January 1, 2017.

JDCH is currently operating a near-road NO₂ monitoring site. JCDH has relocated the CO monitor currently at East Thomas (AQS ID 01-073-0028) to this new site (AQS ID 01-073-2059) to meet the new monitoring requirements. The East Thomas site was closed due to Alabama Department of Transportation road expansion on Arkadelphia Road.

JCDH is proposing to discontinue monitoring for CO at the Sloss Shuttlesworth site due to low concentrations and the facility shutdown of the source (in 1999), Walter Energy Mineral Wool facility that was the primary contributor to and reason for monitoring CO at the Sloss Shuttlesworth site. JCDH installed the CO monitor in 1996 as a fenceline site for the mineral wool facility.

Currently CO is monitored at the following 4 sites :

Table 4 - JCDH CO Monitoring sites

AQS No.	County	Site Name	Latitude	Longitude	Start Date	Objective	Scale	Frequency
01-073-2059	Jefferson	Near Road Site	33.521427	-86.815000	1/1/2014	High Pop. Exposure	Micro	Continuously Year-round
01-073-1003	Jefferson	Fairfield, PFD	33.485556	-86.915062	12/11/74	High Pop. Exposure	Neighborhood	Continuously Year-round
01-073-6004	Jefferson	N. B'ham, Sloss	33.565278	-86.796389	9/25/96	High Conc.	Neighborhood	Continuously Year-round
01-073-0023	Jefferson	N. B'ham, SR	33.553031	-86.814853	3/1/2000	High Pop. Exposure	Neighborhood	Continuously Year-round

Nitrogen Dioxide (NO₂) Network

On January 22, 2010 the US EPA finalized the monitoring rules for Nitrogen Dioxide. The new rules include new requirements for the placement of new NO₂ monitors in urban areas. These include:

Near Road Monitoring

- At least one monitor must be located near a major road in each CBSA with a population greater than or equal to 500,000 people. A second monitor is required near another major road in areas with either:

- (1) CBSA population greater than or equal to 2.5 million people, or
- (2) one or more road segment with an annual average daily traffic (AADT) count greater than or equal to 250,000 vehicles.

These NO₂ monitors must be placed near those road segments ranked with the highest traffic levels by AADT, with consideration given to fleet mix, congestion patterns, terrain, geographic location, and meteorology in identifying locations where the peak concentrations of NO₂ are expected to occur. Monitors must be placed no more than 50 meters (about 164 feet) away from the edge of the nearest traffic lane.

For near road NO₂ monitoring Birmingham-Hoover is the only CBSA in Alabama with a population greater than 500,000. However, the population is less than 2.5 million and there are no road segments with AADT greater than 250,000 vehicles. Therefore, one near road NO₂ monitor is located in the Birmingham-Hoover CBSA. JCDH has established a site at Arkadelphia Road (AQS ID 01-073-2059). The establishment of a permanent near-road NO₂ monitoring site met design and siting criteria as spelled out in 40 CFR Part 58 and was operational by January 1, 2014.

Community Wide Monitoring

- A minimum of one monitor must be placed in any urban area with a population greater than or equal to 1 million people to assess community-wide concentrations.
- An additional 53 monitoring sites will be required to assess community-wide levels in urban areas.
- Some NO₂ monitors already in operation may meet the community-wide monitor siting requirements.

For community wide monitoring, The Birmingham-Hoover is the only CBSA in Alabama with a population greater than 1 million, so there will need to be one NO₂ monitor located there. JDCH added community wide NO₂ sampling to the NCore site at North Birmingham (AQS ID 01-073-0023) which began operation January 1, 2014.

Sulfur Dioxide (SO₂) Network

On June 2, 2010, EPA strengthened the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO₂). EPA is revising the primary SO₂ standard by establishing a new 1-hour standard at a level of 75 parts per billion (ppb).

According to EPA, for a short-term 1-hour SO₂ standard, it is more technically appropriate, efficient, and effective to use modeling as the principal means of assessing compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not as conducive to modeling. Such an approach is consistent with EPA's historical approach and longstanding guidance for SO₂. EPA is setting specific minimum requirements that inform states on where they are required to place SO₂ monitors. The final monitoring regulations require monitors to be placed in Core Based Statistical Areas (CBSAs) based on a Population Weighted Emissions Index (PWEI) for the area. The final rule requires:

- 3 monitors in CBSAs with index values of 1,000,000 or more;
- 2 monitors in CBSAs with index values less than 1,000,000 but greater than 100,000; and
- 1 monitor in CBSAs with index values greater than 5,000.

Based on this the Birmingham-Hoover CBSA requires 2 SO₂ monitors. JDCH has two sites at North Birmingham (AQS ID 01-073-0023) and Fairfield (AQS ID 01-073-1003) with SO₂ monitoring that fulfills the monitoring requirement.

The Huntsville CBSA has a PWEI less than 5,000 so no SO₂ monitor is required.

Based on the latest PWEI 1 SO₂ monitor is required in the Mobile, MSA. ADEM operates an SO₂ monitor at the Chickasaw site (AQS ID 01-097-0003) for the Mobile CBSA. This site became operational on January 1st, 2013.

Table 5 - CBSA's PWEI and number of monitors required
Population Weighted Emissions Index (PWEI) Calculations
May 2015 - Using 2014 Census Estimates & 2011 NEI

CBSA Name	2011 NEI so2 (tpy)	Population (2013)	PWEI in Million persons- tpy	Required Monitors
Birmingham-Hoover, AL	119,145	1,263,739	150,568	2
Mobile, AL	20,673	415,123	8,582	1
Florence-Muscle Shoals, AL	19,441	147,639	2,870	0
Montgomery, AL	5,724	373,141	2,136	0
Columbus, GA-AL	3,787	314,005	1,189	0
Huntsville, AL	2,671	441,086	1,178	0
Decatur, AL	6,175	153,084	945	0
Tuscaloosa, AL	2,425	237,761	577	0
Talladega-Sylacauga, AL	6,154	92,208	567	0
Gadsden, AL	4,391	103,531	455	0
Scottsboro, AL	6,927	52,665	365	0
Troy, AL	8,211	33,389	274	0
Daphne-Fairhope-Foley, AL	627	200,111	125	0
Dothan, AL	777	148,095	115	0
Auburn-Opelika, AL	743	154,255	115	0
Anniston-Oxford, AL	848	115,916	98	0
Albertville, AL	1,015	94,636	96	0
Cullman, AL	590	81,289	48	0
Selma, AL	1,138	41,711	47	0
Enterprise-Ozark, AL	392	50,909	20	0
Ozark	168	49,484	8	0

PM₁₀ Network

PM₁₀ has been a criteria pollutant since 1987. Since that time there has been widespread monitoring of the PM₁₀ levels in Alabama. In 2006 the US EPA modified the NAAQS for PM₁₀ to revoke the annual standard. Currently, there is still a daily standard of 150 ug/m³ based on 3 years of data. All monitors in the state have recorded PM₁₀ levels that meet the NAAQS. Table 7 shows the minimum monitoring requirements.

Table 6 - APPENDIX D TO PART 58. PM₁₀ MINIMUM MONITORING REQUIREMENTS

TABLE D-4 OF APPENDIX D TO PART 58. PM₁₀ MINIMUM MONITORING REQUIREMENTS (NUMBER OF STATIONS PER MSA)¹			
Population category	High concentration²	Medium concentration³	Low concentration^{4,5}
>1,000,000	6-10	4-8	2-4
500,000-1,000,000	4-8	2-4	1-2
250,000-500,000	3-4	1-2	0-1
100,000-250,000	1-2	0-1	0

1 Selection of urban areas and actual numbers of stations per area within the ranges shown in this table will be jointly determined by EPA and the State Agency.

2 High concentration areas are those for which ambient PM₁₀ data show ambient concentrations exceeding the PM₁₀ NAAQS by 20 percent or more.

3 Medium concentration areas are those for which ambient PM₁₀ data show ambient concentrations exceeding 80 percent of the PM₁₀ NAAQS.

4 Low concentration areas are those for which ambient PM₁₀ data show ambient concentrations less than 80 percent of the PM₁₀ NAAQS.

5 These minimum monitoring requirements apply in the absence of a design value.

The Birmingham-Hoover MSA's PM₁₀ concentrations are less than 80 percent of the PM₁₀ National Ambient Air Quality Standards (NAAQS). According to table 7 above, MSA's with populations greater than 1,000,000 and low concentrations (less than 80 percent of PM₁₀ NAAQS), are required to operate between 4 and 8 sites. Based on the concentration of the MSA's population and emissions being in Jefferson County, and historical PM₁₀ monitoring in Walker, Shelby, and Chilton Counties indicating levels in the low concentration range, these required sites are located in Jefferson County and operated by the JCDH. Currently JCDH operates low-volume PM₁₀ monitors at seven sites located in the main industrial valley. The North Birmingham/NCore site operates on a 1 in 3 day schedule. Three sites, North Birmingham, Wylam and Tarrant Elementary School are collocated on the six day schedule. Four of the PM₁₀ sites, North Birmingham, Wylam, Sloss and Tarrant Elementary School, have continuous PM₁₀ monitors for quality assurance purposes. The collocated pair of PQ200s at the NCore site will continue to be operated at local conditions for lead monitoring.

All other monitors in Alabama have indicated the PM₁₀ levels to be in the low concentration range. For MSAs less than 250,000 population zero PM₁₀ monitors are required. Huntsville, Mobile and Montgomery MSAs have populations between 250,000 and 500,000 and are required to have 0 to 1 monitors. The Mobile MSA had 1 site at WKRG (01-097-0016) with two monitors, one of them being the collocated monitor. Due to problems with the infrastructure at the WKRG site and the expense of required to maintain the site, ADEM closed this site as of December 29, 2014 as described in the 2014 Annual Network Plan.

The Montgomery MSA has 1 site at MOMS (01-101-1002) with two monitors, one of them being the collocated monitor.

The Huntsville MSA also falls in this size range and the City of Huntsville currently operates four PM₁₀ monitors and 1 collocated monitor at Huntsville Old Airport (AQS ID 01-089-0014).

The Columbus GA/AL MSA has a population of 310,531 and historically has had low PM₁₀ concentration; the PM₁₀ monitor operated by the State of Georgia was closed 12/31/2012.

Ozone Network

Minimum monitoring requirements for ozone are based on population and whether the design value is less than 85% of the NAAQS or greater than or equal to 85% of the NAAQS (See Table 8). The NAAQS for ozone is 0.075 parts per million of ozone therefore 85% of the NAAQS truncated is 0.063 ppm. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).

Table 7 - APPENDIX D TO PART 58. SLAMS MINIMUM O₃ MONITORING REQUIREMENTS

TABLE D-2 OF APPENDIX D TO PART 58.— SLAMS MINIMUM O₃ MONITORING REQUIREMENTS		
MSA population^{1, 2}	Most recent 3-year design value concentrations \geq85% of any O₃ NAAQS³	Most recent 3-year design value concentrations $<$85% of any O₃ NAAQS^{3, 4}
>10 million	4	2
4–10 million	3	1
350,000–<4 million	2	1
50,000–<350,000 ⁵	1	0

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

2 Population based on latest available census figures.

3 The ozone (O₃) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.

4 These minimum monitoring requirements apply in the absence of a design value.

5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

Table 9 below lists Alabama's Ozone sites, the name of the MSA they are located in, the 2012 estimated population of the MSAs, the 2010-2012 Ozone Design Values, the number of monitors required by the CFR and the number of monitors existing.

Table 8- Alabama MSAs with Ozone Monitoring Sites and current Design Value

Site Name	AQS ID	2012-2014 Design Values	MSA	Est. 2014 Pop.	MSA Max DV	# of sites required per CFR	Current # of sites
North Birmingham	01-073-0023	0.067	Birmingham-Hover	1,263,739	0.070	2	8
Fairfield	01-073-1003	0.068					
McAdory School	01-073-1005	0.068					
Leeds Elem. School	01-073-1010	0.069					
Hoover	01-073-2006	0.067					
Corner High School	01-073-5003	0.065					
Tarrant Elem. School	01-073-6002	0.070	Columbus, GA- Phenix City, AL	314,005	0.062	1	2*
Helena	01-117-0004	0.068					
Phenix City - Ladonia	01-113-0002	0.062	Decatur	153,084	0.065	1	1
Columbus, GA, Airport	13-215-0008	0.062					
Decatur	01-103-0011	0.065	Dothan	148,095	0.061	1	1
Dothan	01-069-0004	0.061	Daphne-Fairhope	200,111	0.066	1	1
Fairhope	01-003-0010	0.066					
Muscle Shoals	01-033-1002	0.063	Florence	147,639	0.063	1	1
Southside	01-055-0011	0.060	Gadsden	103,531	0.06	0	1
Huntsville Old Airport	01-089-0014	0.068	Huntsville	441,086	0.068	2	2
Huntsville Capshaw RD	01-089-0022	0.065					
Mobile - Chickasaw	01-097-0003	0.065	Mobile	415,123	0.067	2	2
Mobile - Bay Road	01-097-2005	0.067					
DBT	01-051-0001	0.062	Montgomery	373,141	0.063	2	2
Montgomery - MOMS	01-101-1002	0.063					
Duncanville, Tuscaloosa	01-125-0010	0.058	Tuscaloosa	237,761	0.058	0	1
Sumter Co. (Background)**	01-119-0003	0.058	not in MSA		NA		1
Sand Mtn. ***	01-049-9991	0.065	not in MSA		NA		
No monitor			Anniston-Oxford	115,916	NA	0	
No monitor			Auburn-Opelika	154,255	NA	0	
*1 in AL and 1 in GA			DV ≥ 85% of the NAAQS				
** Only 1 year of data (2013)							
*** CASTNET site operated by EPA contractor.							

Ozone Monitoring requirements for Alabama MSAs

Birmingham-Hoover MSA

The Birmingham-Hoover MSA's population is between 350,000 and 4,000,000 and the design value is greater than 85% of the NAAQS. Two Ozone monitors are required for this MSA. There are currently 8 Ozone sites in this MSA. One site is located in Shelby County and is operated by ADEM. Seven sites, operated by the JCDH, are located in Jefferson County. Additional information about these monitors is found in the JCDH Network description. No changes are planned for this MSA.

Columbus, GA/AL MSA

The Columbus GA/AL MSA's population is between 50,000 and 350,000 and the design value is less than 85% of the NAAQS. No ozone monitor is required for this MSA. There is currently 1 site maintained by ADEM, west of Phenix City in Russell County and 1 site is located in Georgia and operated by the State of Georgia. No changes are planned for this MSA.

Decatur MSA

The Decatur MSA's population is between 50,000 and 350,000 and the design value is greater than 85% of the NAAQS. One Ozone monitor is required for this MSA. There is currently one site, and it will be retained.

Dothan MSA

The Dothan MSA's population is between 50,000 and 350,000 and the design value is less than 85% of the NAAQS. No ozone monitor is required for this MSA. There is currently one site, and it will be retained.

Daphne-Fairhope-Foley MSA

The population of the Daphne-Fairhope-Foley MSA is between 50,000 and 350,000 and the design value is greater than 85% of the NAAQS. One Ozone monitor is required for this MSA. There is currently one site, and it will be retained.

Florence-Muscle Shoals MSA

The Florence-Muscle Shoals MSA's population is between 50,000 and 350,000 and the design value is greater than 85% of the NAAQS. One Ozone monitor is required for this MSA. There is currently one Ozone site in this MSA, and it will be retained.

Gadsden MSA

The Gadsden MSA's population is between 50,000 and 350,000 and the design value is less than 85% of the NAAQS therefore no monitor is required for that area. There is currently one Ozone monitor in this MSA, and it will be retained.

Huntsville MSA

The Huntsville MSA's population is between 350,000 and 4,000,000 and the design value is greater than 85% of the NAAQS. Two Ozone monitors are required for this MSA. There are currently 2 Ozone sites operated by the City of Huntsville (HDNREM), and these will be retained.

Mobile MSA

The Mobile MSA's population is between 350,000 and 4,000,000 and the design value is greater than 85% of the NAAQS. Two Ozone monitors are required for this MSA. There are currently 2 Ozone sites, and these will be retained.

Montgomery MSA

The Montgomery MSA's population is between 350,000 and 4,000,000 and the design value is greater than 85% of the NAAQS. Two Ozone monitors are required for this MSA. There are currently 2 Ozone sites, and these will be retained.

Tuscaloosa MSA

The Tuscaloosa MSA's population is between 50,000 and 350,000 and the design value is less than 85% of the NAAQS. Therefore no monitor is required for that area. There is currently one Ozone monitor in this MSA, and it will be retained.

Auburn-Opelika and Anniston-Oxford MSAs

The MSAs of Auburn-Opelika and Anniston-Oxford were evaluated by ADEM. Both MSAs have populations less than 150,000. It was determined that due to the close proximity of the ozone monitors in the neighboring MSAs, additional monitors would not be needed. The monitors in the adjacent MSAs provide adequate monitoring coverage. Since these areas do not have design values, no Ozone monitors are required by Appendix D of 40 CFR 58.

Sites not located in an MSA

Sumter County represents rural, background ozone values for the state. After loss of the lease for this site, ADEM relocated the site and re-started monitoring on 3/01/2013. The historical design values for this monitor have been less than 85% of the NAAQS. The new AQS ID is 01-119-0003 with the local site name of "Ward, Sumter Co."

There is an Ozone monitor located at the CASNET site near Crossville in DeKalb county and it is maintained by EPA. It is Sand Mountain (AQS ID 01-049-9991). The design value for this site is greater than 85% of the NAAQS.

PM_{2.5} Network

Minimum monitoring requirements for PM_{2.5} are based on population and whether the design value is less than 85% of the NAAQS or greater than or equal to 85% of the NAAQS (See Table 10). In addition to these monitors, the state is required to operate a regional background and a regional transport site. Section 4.7.2 of Appendix D of 40CFR58 also requires a collocated continuous PM_{2.5} monitor in each MSA that is required to have a FRM monitor. The number of collocated continuous monitors required for an MSA will be equal to at least half of the required FRM monitors for that MSA. This requirement goes away if the continuous monitor is a FEM that is labeled as the primary and comparable to the NAAQS. The state is also required to operate PM_{2.5} speciation monitors to characterize the constituents of PM_{2.5}. The number of speciation monitors is determined in consultation with EPA Region IV. PM_{2.5} design values in Table 10 are based on 2011 – 2013 data. A design value of 30 ug/m³ is the lowest value which is greater than or equal to 85% of the 24-hour standard of 35 ug/m³. A design value of 10.2 ug/m³ is the lowest value that is greater than or equal to 85% of the annual standard of 12 ug/m³ (effective March 18, 2013).

Table 9 - APPENDIX D TO PART 58, PM_{2.5} MINIMUM MONITORING REQUIREMENTS
TABLE D-5 OF APPENDIX D TO PART 58. PM_{2.5} MINIMUM MONITORING REQUIREMENTS

MSA population ^{1,2}	Most recent 3-year design value ≥85% of any PM _{2.5} NAAQS ³	Most recent 3-year design value <85% of any PM _{2.5} NAAQS ^{3,4}
>1,000,000	3	2
500,000–1,000,000	2	1
50,000–<500,000 ⁵	1	0

1 Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).

2 Population based on latest available census figures.

3 The PM_{2.5} National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.

4 These minimum monitoring requirements apply in the absence of a design value.

5 Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

The New PM_{2.5} Rule requires CBSAs with populations greater than a million but less than 4 million operate a PM_{2.5} monitor at its NO₂ near road site by January 1, 2017. The only CBSA in Alabama that requires a NO₂ near road monitoring site is the Birmingham-Hoover MSA.

In order to meet the continuous monitoring requirements of Appendix D, ADEM currently operates 6 MetOne BAM monitors (AQS method code 731) and 1 Thermo Scientific TEOM monitor (AQS method code 716) which do not have FEM designation. These monitors are also used for AQI submittals and for submittal to the AirNow system. Comparison with the NAAQS will be based on the FRMs at each site which are designated as the primary monitor and are operating on the required frequency.

Table 11 below lists Alabama's PM_{2.5} sites, the name of the MSA they are located in, the 2012 estimated population of the MSAs, the 2011-2013 PM_{2.5} Annual and 24-hour Design Values, the number of monitors required by the CFR and the number of monitors existing.

Table 10- MSAs with PM_{2.5} Monitoring Sites and current Design Value

Site Name	AQS Site ID	PM _{2.5} 24 hr DV 2012- 2014	PM _{2.5} Annual DV 2012- 2014	MSA	2013 est Pop.	Annual MSA DV	24hr MSA DV	# of sites required per CFR	Current # of sites
North Birmingham	01-073-0023	23	11.3	Birmingham-Hoover	1,263,739	11.3	23	3	7
McAdory School	01-073-1005	NA**	NA**						
Leeds Elem. School	01-073-1010	21	10.2						
Wylam	01-073-2003	22	10.8						
Sloss Shuttlesworth	01-073-6004	NA**	NA**						
Arkadelphia	01-073-2059	NA**	NA**						
Pelham	01-117-0006	19	9.4	Columbus, GA/AL	314,005	10.7	25.0	1	4*
Muscookee DH GA	13-215-0001	21	10.2						
Columbus Airport GA	13-215-0008	21	10.0						
Cussetta Rd GA	13-215-0011	25	10.1						
Phenix City - Downtown	01-113-0001	22	10.7						
Decatur	01-103-0011	18	8.9	Decatur	153,084	8.9	18.0	1	1
Dothan	01-069-0003	18	8.6	Dothan	148,095	8.6	18.0	0	1
Fairhope	01-003-0010	18	8.8	Daphne-Fairhope-Foley	200,111	8.8	18.0	0	1
Muscle Shoals	01-033-1002	19	8.9	Florence-Muscle Shoals	147,639	8.9	19.0	0	1
Gadsden - CC	01-055-0010	18	9.4	Gadsden	103,531	9.4	18.0	1	1
Huntsville Old Airport	01-089-0014	19	9.0	Huntsville	441,086	9.0	19.0	1	1
Mobile - Chickasaw	01-097-0003	18	8.7	Mobile	415,123	8.7	18.0	0	1
Montgomery - MOMS	01-101-1002	20	9.9	Montgomery	373,141	9.9	20.0	1	1
Tuscaloosa - VA Hospital	01-125-0004	20	9.2	Tuscaloosa	237,761	9.2	20.0	1	1
Ashland	01-027-0001	18	8.6	Not in MSA		8.6	18.0		1
Crossville	01-049-1003	18	9.3	Not in MSA		9.3	18.0		1
Childersburg	01-121-0002	19	9.6	Not in MSA		9.6	19.0		1
Ward, Sumter Co. Background (continuous)	01-119-0003			Not in MSA					1
No Monitor				Anniston-Oxford	115,916	NA	NA	0	0
No Monitor				Auburn-Opelika	154,255	NA	NA	0	0

DV ≥ 85% of the NAAQS

*1 in AL and 3 in GA

** incomplete dataset

PM_{2.5} Monitoring requirements for Alabama MSAs

Birmingham-Hoover MSA

The Birmingham MSA population is greater than 1 million, and the PM_{2.5} annual design value is greater than 85% of the NAAQS. For this area, 3 FRM and 2 continuous monitors are required. Currently there are 6 FRM monitoring sites in this MSA, however, the Pelham FRM monitor, operated by ADEM, will be shut down in June 2015 due to loss of access to the site. The remaining 5 FRM monitors are located in Jefferson County and are operated by the JCDH. JCDH also operates 4 collocated monitors, 6 continuous monitors, 2 STN speciation monitors and 1 IMPROVE speciation monitor in Jefferson County. Due to inconsistencies in measurements and readings, JCDH is requesting a variance/exclusion from using the PM_{2.5} continuous FEM data at the North Birmingham site for NAAQS purposes. Further details of the basis for the variance/exclusion request and the JCDH PM_{2.5} network can be found in the Network Description section of this document.

Further details of the JCDH PM_{2.5} network can be found in the Network Description section of this document. No changes are planned for this MSA.

Columbus, GA/AL MSA

The Columbus, GA/AL MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual design value is greater than 85% of the NAAQS. This MSA is required to have one FRM and one continuous monitor. There are currently 4 FRMs, 1 collocated FRM, 2 non-FRM/FEM/ARM continuous monitors, and 2 speciation monitors in this MSA. ADEM operates 1 FRM, 1 collocated FRM, 1 speciation monitor, and 1 non-FRM/FEM/ARM continuous monitor at the Phenix City, AL downtown site. The State of Georgia operates 3 FRMs, 1 speciation monitor and 1 continuous monitor in Columbus. No changes are planned for this MSA.

Daphne-Fairhope-Foley MSA

The Daphne-Fairhope-Foley MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual and 24-hour design values are less than 85% of the NAAQS. No PM_{2.5} FRM monitor is required in this MSA. There is currently 1 FRM located in this MSA. No changes are planned for this MSA.

Decatur MSA

The Decatur MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual design value is less than 85% of the NAAQS. This MSA is required to have no FRM monitor. There is currently 1 FRM and 1 non-FEM continuous monitor located in this MSA. No changes are planned for this MSA.

Dothan MSA

The Dothan MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual and 24-hour design values are less than 85% of the NAAQS. No PM_{2.5} FRM monitor is required in this MSA. There is currently 1 FRM located in this MSA. No changes are planned for this MSA.

Florence-Muscle Shoals MSA

The Florence-Muscle Shoals MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual and 24-hour design values are less than 85% of the NAAQS. No PM_{2.5} FRM monitor is required in this MSA. There is currently 1 FRM located in this MSA. No changes are planned for this MSA.

Gadsden MSA

The Gadsden MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual design value is less than 85% of the NAAQS. This MSA is not required to have an FRM. There is currently 1 FRM located in this MSA and 1 non-FEM continuous monitor at this site.

Huntsville MSA

The Huntsville MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual design value less than 85 % of the NAAQS. This MSAs is not required to have an FRM or continuous monitor. Currently there is one FRM, one collocated FRM monitor, one speciation monitor and one non-FRM/FEM/ARM continuous monitor located in this MSA operated by the City of Huntsville (HDNREM). No changes are planned for this MSA.

Mobile MSA

The Mobile MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual and 24-hour design values are less than 85% of the NAAQS. No PM_{2.5} FRM monitor is required in this MSA. There is currently 1 FRM, and 1 non-FEM continuous monitor located in this MSA. No changes are planned for this MSA.

Montgomery MSA

The Montgomery MSA is between 50,000 and 500,000 and the PM_{2.5} annual design value is less than 85 % of the NAAQS. No PM_{2.5} FRM monitor is required in this MSA. There is currently 1 FRM, 1 collocated FRM, 1 non-FEM continuous monitor located in this MSA.

Tuscaloosa MSA

The Tuscaloosa MSA has a population between 50,000 and 500,000 and the PM_{2.5} annual design value is less than 85% of the NAAQS. This MSAs is not required to an FRM or continuous monitor. There is currently 1 FRM located in this MSA and 1 non-FEM continuous monitor.

Auburn-Opelika and Anniston-Oxford MSAs

In 1999 when the PM_{2.5} monitoring program was implemented in Alabama, the MSAs of Auburn-Opelika and Anniston-Oxford were evaluated to determine the need for monitors. Both MSAs have populations less than 150,000. It was determined that due to the close proximity of monitors in the neighboring MSAs with monitors, additional monitors would not be needed. The monitors in the adjacent MSAs continue to provide adequate monitoring coverage. Since these areas do not have design values, no FRM monitors are required by Appendix D of 40 CFR 58.

Monitors not located in MSAs

Sumter County represents rural, background PM_{2.5} values for the west part of the state. ADEM operated a FRM in Sumter County but closed it in 2006. A non-FEM continuous monitor is being operated in Sumter County. ADEM intends to maintain this site.

The Micropolitan Statistical Area of Talladega-Sylacauga has a population of 92,728. It is adjacent to the Anniston-Oxford and the Birmingham-Hoover MSAs. There is currently 1 FRM located in Talladega County in Childersburg. The design value for this monitor is greater than 85% of the NAAQS. ADEM intends to maintain this site.

There is an FRM located near Ashland in Clay County to serve as a regional transport site in between the large MSAs of Birmingham and Atlanta. The PM_{2.5} annual and 24-hour design values are less than 85% of the NAAQS for this monitor. ADEM intends to maintain this site.

The Crossville site in De Kalb County is a rural background site in northeast Alabama. The PM_{2.5} annual is less than 85% of the NAAQS. ADEM intends to maintain this site.

Quality Assurance

Each of the three monitoring agencies have US EPA approved Quality Assurance Program Plans that detail the activities used to control and document the quality of the data collected. Part of the EPA required quality control program for particulate monitors is the use of collocated particulate monitors. 40 CFR 58, appendix A requires a percentage of manual particulate monitors to be collocated with FRM monitors so that quality statistics can be calculated.

Each agency network includes monitors for this purpose.

Monitoring Equipment Evaluation

An evaluation of the condition of ambient monitors and auxiliary equipment was performed by each of the three monitoring agencies. The equipment was categorized as “good” or “poor”. As resources allow equipment in “poor” condition will be replaced.

NETWORK DESCRIPTIONS

A description of the ambient air monitoring networks for each air pollution agency will be presented in this section.

Included will be:

- AQS ID
- Address
- Latitude and Longitude
- Scale
- Type
- Monitoring Objective
- Beginning Sampling Date and Ending Sampling Date
- Method
- Operating Schedule
- Is it comparable to the NAAQS?

ADEM AIR MONITORING NETWORK DESCRIPTION

Abbreviations	
Scale	
N	Neighborhood (0.5 – 4 Kilometers)
U	Urban (overall citywide conditions, 4 -50 kilometers)
R	Regional (usually rural, with homogenous geography, tens to hundreds of kilometers)
M	Middle Scale
Type	
CAS	CASNET operated by EPA
S	SLAMS
QA	QA Collocated Monitor
SPM	Special Purpose Monitor
Operating Schedule	
C	Continuous monitor
D	Daily 24-hour samples
3	1 24-hour sample every 3 days (on national schedule)
6	1 24-hour sample every 6 days (on national schedule)
Methods	
H	Hi-volume SSI sampler
L	Low Volume SSI
T	TEOM continuous monitor
B	BAM continuous monitor
U	UV photometric ozone analyzer
P	Pulsed Fluorescent
S	Hi-Volume Total Suspended Particulate monitor
G	Lead Analysis by FAAS
NAAQS¹	
Y,N	Data suitable for comparison to NAAQS

¹ Collocated monitors must be operated in the same manner as the federal reference method but 1 monitor at the site is designated as the main monitor for comparison to the NAAQS.

PM₁₀

Site common name	County	AQS Site ID	Address	Latitude	Longitude	S C T A Y L P E	Monitoring objective / CBSA	Date Began	Date Ended	S C H E M E T H O D S	Comment
Mobile - WKRGM	Mobile	01-097-0016	WKRGM transmitting Shn, Telegraph Rd.	30.72028	-88.05889	N S	Population Exposure / Mobile, AL	1/1/1982	12/29/2014	H 6 Y	
Mobile - WKRGM	Mobile	01-097-0016	WKRGM transmitting Shn, Telegraph Rd.	30.72028	-88.05889	N Q	Population Exposure / Mobile, AL	1/1/1982	12/29/2014	H 6 Y	collocated
Montgomery - MOMS	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	N S	Population Exposure / Montgomery, AL	6/1/1993	active	H 6 Y	
Montgomery - MOMS	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	N Q	Population Exposure / Montgomery, AL	1/1/2013	active	H 6 Y	collocated

Lead

Site common name	County	AQS Site ID	Address	Latitude	Longitude	S C T A Y L P E	Monitoring objective / CBSA	Date Began	Date Ended	S C H E M E T H O D S	Comment
Troy	Pike	01-109-0003	Henderson Road, Troy, AL	31.790560	-85.979170	N S	Highest Concentration / Troy, AL	1/1/2009	active	S 6 Y	
Troy	Pike	01-109-0003	Henderson Road, Troy, AL	31.790560	-85.979170	N Q	Highest Concentration / Troy, AL	1/1/2009	active	S 6 Y	collocated

PM 2.5

Site common name	County	AQS Site ID	Address	Latitude	Longitude	S C A L E	Monitoring objective / CBSA	Date Began	Date Ended	M E T H O D	S C H E D U L E	Comment
Fairhope	Baldwin	01-003-0010	Fairhope High School, Fairhope, AL	30.49778	-87.88139	N	Population exposure/ Daphne-Fairhope	1/1/2000	active	L	3 Y	
Ashland	Clay	01-027-0001	Ashland Airport	33.28111	-85.80222	R	Highest Concentration/ not in CBSA	1/1/1999	active	L	3 Y	
Muscle Shoals	Colbert	01-033-1002	2nd Street and Wilson Dam Road	34.76056	-87.65056	N	Highest Concentration/ Florence MSA	1/1/1999	active	L	3 Y	
Crossville	DeKalb	01-049-1003	13112 Hwy 68, Crossville AL	34.2875	-85.96833	R	General/background	1/1/1999	active	L	3 Y	
Gadsden - CC	Ebawah	01-055-0010	1001 Wallace Dr Gadsden, AL	33.99361	-85.99111	U	Population Exposure/ Gadsden MSA	1/1/2000	active	L	3 Y	
Gadsden - CC	Ebawah	01-055-0010	1001 Wallace Dr Gadsden, AL	33.99361	-85.99111	U	Population Exposure/ Gadsden MSA	3/1/2014	active	B	C N	Collocated Non- FEM Continuous
Dothan	Houston	01-069-0003	126 North St Andrews St Civic Center	31.22621	-85.39082	N	Population Exposure/ Dothan MSA	1/7/2005	active	L	3 Y	
Mobile - Chickasaw	Mobile	01-097-0003	Iroquois and Azalea, Chickasaw	30.76972	-88.0875	N	Population Exposure/ Mobile MSA	7/19/2002	active	L	3 Y	
Mobile - Chickasaw	Mobile	01-097-0003	Iroquois and Azalea, Chickasaw	30.76972	-88.0875	N	Population Exposure/ Mobile MSA	3/1/2011	active	B	C N	Collocated Non- FEM Continuous

PM 2.5 continued

Site common name	County	AQS Site ID	Address	Latitude	Longitude	STALEP	Monitoring objective / CBSA	Date Began	Date Ended	SETHUOLQ	Comment
Montgomery - MOMS	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	N S	Population Exposure/ Montgomery MSA	1/16/2009	active	L 3 Y	
Montgomery - MOMS	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	N Q A	Population Exposure/ Montgomery MSA	1/16/2009	active	L 6 Y	Collocated
Montgomery - MOMS	Montgomery	01-101-0002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	N S	Population Exposure/ Montgomery MSA	4/1/2009	active	B C N	Collocated Non-FEM Continuous
Decatur	Morgan	01-103-0011	Wallace Ctr Hwy 31, Decatur	34.51861	-86.97694	M S	Population Exposure/ Decatur MSA	8/7/2001	active	L 3 Y	
Decatur	Morgan	01-103-0011	Wallace Ctr Hwy 31, Decatur	34.51861	-86.97694	M S	Population Exposure/ Decatur MSA	4/1/2009	active	B C N	Collocated Non-FEM Continuous
Phenix City - Downtown	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.47639	-84.99917	N S	Highest Concentration/ Columbus, GA-AL MSA	1/1/1999	active	L 3 Y	
Phenix City - Downtown	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.47639	-84.99917	N Q A	Highest Concentration/ Columbus, GA-AL MSA	5/17/2004	active	L 3 Y	collocated
Phenix City - Downtown	Russell	01-113-0001	St. Patrick's Church, Phenix City	32.47639	-84.99917	N S	Highest Concentration/ Columbus, GA-AL MSA	1/25/2010	active	T C N	Collocated Non-FEM Continuous
Pelham	Shelby	01-117-0006	Pelham High School	33.31278	-86.82111	U S	Highest Concentration/ Birmingham MSA	1/1/1999	will close	L 3 Y	end date 06/2015
Ward, Sumter C.O.	Sumter	01-119-0003	NNE of Ward Post office, Sumter Co., Alabama	32.362706	-88.277954	R S	Background/General/ not in MSA	3/1/2013	active	B C N	Non-FEM Continuous. For Background.
Childersburg	Talladega	01-121-0002	300 1st Street Southeast, Childersburg, AL	33.27944	-86.34944	N S	Highest Concentration/ Talladega MSA	1/1/1999	active	L 3 Y	
VA, Tuscaloosa	Tuscaloosa	01-125-0004	3701 Loop Road East	33.18903	-87.48421	N S	Population Exposure/ Tuscaloosa MSA	10/1/2002	active	L 3 Y	
VA, Tuscaloosa	Tuscaloosa	01-125-0004	3701 Loop Road East	33.18903	-87.48421	N S	Population Exposure/ Tuscaloosa MSA	3/1/2014	active	B 3 N	Collocated Non-FEM Continuous

OZONE

Site common name	County	AQS Site ID	Address	Latitude	Longitude	SCTALP Element	Monitoring objective / CBSA	Date Began	Date Ended	SCHEMTHUA OLQDES	Comment
Fairhope	Baldwin	01-003-0010	Fairhope High School, Fairhope, AL	30.49778	-87.88139	NSP	Population Exposure/ Mobile MSA	3/1/2000	active	U	CY
Muscle Shoals	Colbert	01-033-1002	Wilson Dam Rd And 2nd St	34.76056	-87.65056	NSP	Population Exposure/ Decatur MSA	3/1/2003	active	U	CY
DBT	Elmore	01-051-0001	Dewberry Trail, Wetumpka	32.49833	-86.13667	US	Highest Concentration/ Montgomery MSA	3/1/1990	active	U	CY
Southside	Elowah	01-055-0011	1450 Parker Anderson Lane, Southside, AL	33.9039	-86.0539	NS	Max Concentration/ Gadsden MSA	4/26/2002	active	U	CY
Dothan	Houston	01-069-0004	161 Buford Lane	31.19041	-85.42317	NS	Population Exposure/ Dothan MSA	3/14/2005	active	U	CY
Mobile - Chickasaw	Mobile	01-097-0003	Iroquois And Azalea Chickasaw	30.76972	-88.0875	NS	Population Exposure/ Mobile MSA	3/2/1982	active	U	CY
Mobile - Bay Road	Mobile	01-097-2005	Bay Rd , Mobile AL	30.47444	-88.14111	US	Population Exposure/ Mobile MSA	3/1/1999	active	U	CY
Montgomery - MOMS	Montgomery	01-101-1002	1350 Coliseum Blvd, Montgomery, AL	32.412782	-86.263356	NS	Population Exposure/ Montgomery MSA	6/2/1993	active	U	CY
Decatur	Morgan	01-103-0011	Wallace Development Center	34.51861	-86.97694	US	General/Background/ Decatur MSA	4/1/2000	active	U	CY
Phenix City - Ladonia	Russell	01-113-0002	9 Woodland Drive (School) , Ladonia, AL	32.46785	-85.0839	USP	Population Exposure/ Columbus, GA-AL MSA	3/1/2003	active	U	CY
Helena	Shelby	01-117-0004	Helena, Bearden Farm	33.31694	-86.825	US	Population Exposure/ Birmingham MSA	1/1/1983	active	U	CY
Ward, Sumter Co.	Sumter	01-119-0003	NNE of Ward Post Office, Sumter Co., Alabama	32.362706	-87.484217	RS	General/Background/ not in MSA	3/1/2013	active	U	CY
Duncanville, Tuscaloosa	Tuscaloosa	01-125-0010	11650 Southfork Dr., Duncanville, AL	33.08953	-87.45972	US	Population Exposure/ Tuscaloosa MSA	2/1/2001	active	U	CY
Sand Mountain	Dekalb	01-049-9991	Sand Mountain Agricultural Exper. Station Crossville, AL	34.2888	-85.9698	RS	Highest Concentration/ Fort Payne MSA	1/1/2011	active	U	CN operated by EPA

SO₂

Site common name	County	AQS Site ID	Address	Latitude	Longitude	S C A L E	T Y P E	Monitoring objective / CBSA	Date Began	Date Ended	M E T H O D	S C H E D U L E	N A A Q S	Comment
Mobile - Chickasaw	Mobile	01-097-0003	Iroquois And Azalea Chickasaw	30.76972	-88.0875	N	S	Population Exposure/ Mobile MSA	1/1/2013	active	P	C	Y	

JCDH AIR MONITORING NETWORK DESCRIPTION

(As of June 2015)

Abbreviations	
Scale	
N	Neighborhood (0.5 – 4 Kilometers)
U	Urban (overall citywide conditions, 4 -50 kilometers)
R	Regional (usually rural, with homogenous geography, tens to hundreds of kilometers)
MC	Microscale
Type	
CS	Core SLAMS
NCS	NCore SLAMS
S	SLAMS
SPM	Special Purpose Monitor
Operating Schedule	
C	Continuous monitor
D	Daily 24-hour samples
3	1 24-hour sample every 3 days (on national schedule)
6	1 24-hour sample every 6 days (on national schedule)
Methods	
H	Hi-volume SSI sampler
L	Low Volume SSI
T	TEOM continuous monitor
U	UV photometric ozone analyzer
S	Hi-Volume Total Suspended Particulate monitor
G	Lead Analysis by Graphitic furnace
P	Pulsed Fluorescent
I	Non Dispersive Infrared
F	Gas Filter Correlation
B	Beta Attenuation
UP	Chemiluminescence- photolytic
NAAQS²	
Y.N	Data suitable for comparison to NAAQS

² Collocated monitors must be operated in the same manner as the Federal Reference Method; one monitor at the site is designated as the main monitor for comparison to the NAAQS.

Ozone

Site common name	AQS Site ID	Address	Latitude Longitude	State	Local Type	Monitoring objective	Began Sampling	Ended Sampling	Method	Selected	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.533056 -86.815000	N	NC	Neighborhood	03/01/00	Active	U	C	Year Round
Fairfield PFD	01-073-1003	5229 Court B	33.485556 -86.915000	N	S	High Population Exposure	04/26/74	Active	U	C	March - October
McAdory School	01-073-1005	4800 McAdory School Rd.	33.331111 -87.003611	U	S	High Concentration	06/17/87	Active	U	C	March - October
Leeds Elem. School	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N	S	High Population Exposure	03/01/01	Active	U	C	March - October
Hoover	01-073-2006	3425 Tamassee Lane	33.386389 -86.816667	N	S	High Population Exposure	09/01/88	Active	U	C	March - October
Corner School	01-073-5003	1005 Corner School Rd.	33.801667 -86.942500	U	S	Typical Population	03/01/00	Active	U	C	March - October
Tarrant Elem. School	01-073-6002	1269 Portland St.	33.578333 -86.773889	N	S	High Population Exposure	03/24/80	Active	U	C	March - October

6/2/2015

SO₂

Site common name	AQS Site ID	Address	Latitude Longitude	SCAL Type	Monitoring objective	Began Sampling	Ended Sampling	Method	SCHEDLQS	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N C S	High Population Exposure	01/01/11	Active	P	C Y	
Fairfield PFD	01-073-1003	5229 Court B	33.485556 -86.915000	N S	High Population Exposure	12/11/74	Active	P	C Y	

CO

Site common name	AQS Site ID	Address	Latitude Longitude	SCAL Type	Monitoring objective	Began Sampling	Ended Sampling	Method	SCHEDLQS	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N C S	Neighborhood	03/01/00	Active	F	C Y	
Fairfield PFD	01-073-1003	5229 Court B	33.485556 -86.915000	N S	High Population Exposure	04/26/74	Active	I	C Y	
N. Bham Sloss	01-073-6004	4113 Shuttlesworth Dr.	33.565278 -86.796389	N S	High Population Exposure	09/25/96	Active	F	C Y	
Arkadelphia (Near Road)	01-073-2059	1110 5th Street West	33.521427 -86.844112	N S	Neighborhood	01/01/14	Active	F	C Y	

6/2/2015

NO_y

Site common name	AQS Site ID	Address	Latitude Longitude	SCALES	Monitoring objective	Began Sampling	Ended Sampling	SCALES	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N	High Population Exposure	01/01/11	Active	P C Y	

NO₂

Site common name	AQS Site ID	Address	Latitude Longitude	SCALES	Monitoring objective	Began Sampling	Ended Sampling	SCALES	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N	High Population Exposure	01/01/14	Active	UP C Y	Began January 2014
Arkadelphia (Near Road)	01-073-2059	1110 5th Street West	33.521427 -86.844112	N	Neighborhood	01/01/14	Active	UP C Y	Began January 2014

Low Volume PM₁₀

Site common name	AQS Site ID	Address/ MSA	Latitude Longitude	STCLAP	Monitoring objective	Began Sampling	Ended Sampling	MEHEDUOLES	SCHEDELS	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N N C S	High Concentration	01/01/03	Active	L 3	Y	LC/Lead/STP
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N N C S	Collocated Sampler	01/01/03	Active	L 6	Y	LC/Lead/STP
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N S	High Population Exposure	01/01/03	Active	L 6	Y	LC converted to STP
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N S	Collocated Sampler	01/01/03	Active	L 6	Y	LC converted to STP
Tarrant Elem. School	01-073-6002	1269 Portland St.	33.578333 -86.773889	N S	High Population Exposure	01/01/13	Active	L 6	Y	LC converted to STP
Leeds Elem. School	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N S	Typical Population	01/01/04	Active	L 6	Y	LC converted to STP

6/2/2015

Continuous PM₁₀

Site common name	AQS Site ID	Address/MSA	Latitude Longitude	SCALPE	Monitoring objective	Began Sampling	Ended Sampling	ME TH O D S	SC H E N A Q S	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N	S P M	High Concentration	02/01/13	Active	B C N	Began February 2013
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N	S P M	High Population Exposure	07/13/01	Active	T C Y	
Tarrant Elem. School	01-073-6002	1269 Portland St.	33.578333 -86.773889	N	S	High Population Exposure	03/24/80	Active	T C Y	
N. Bham Sloss	01-073-6004	4113 Shuttlesworth Dr.	33.56278 -86.796389	N	S	High Population Exposure	01/25/96	Active	T C Y	

Lead

Site common name	AQS Site ID	Address	Latitude Longitude	SCALPE	Monitoring objective	Began Sampling	Ended Sampling	ME TH O D S	SC H E N A Q S	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N	N C S	Neighborhood	01/01/11	Active	L 3 Y	XRF Analysis
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N	N C S	Collocated Sampler	01/01/11	Active	L 6 Y	XRF Analysis

Site common name	AQS Site ID	Address/ MSA	Latitude Longitude	S C A L E	T Y P E	Monitoring objective	Began Sampling	Ended Sampling	M E T H O D S	S C H E D U L E S	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N	N C S	High Concentration	01/01/99	Active	L 3	Y	
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N	N C S	Collocated Sampler	01/01/99	Active	L 6	Y	
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N	S	High Population Exposure	01/01/99	Active	L 3	Y	
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N	S	Collocated Sampler	01/01/99	Active	L 6	Y	
McAdory School	01-073-1005	4800 McAdory School Rd.	33.331111 -87.003611	N	S P M	Typical Population	01/01/99	Active	L 3	Y	
McAdory School	01-073-1005	4800 McAdory School Rd.	33.331111 -87.003611	N	S P M	Collocated Sampler	01/01/99	Active	L 6	Y	
Leeds Elem. School	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N	S P M	Typical Population	01/01/04	Active	L 6	Y	
Leeds Elem. School	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N	S P M	Collocated Sampler	01/01/04	Active	L 6	Y	
Arkadelphia	01-073-2059	1110 5th Street West	33.521427 -86.844112	N	S	Neighborhood	01/01/14	Active	L 6	Y	Began January 2014

6/2/2015

Continuous PM_{2.5}

Site common name	AQS Site ID	Address/ MSA	Latitude Longitude	SCALPE	Monitoring objective	Began Sampling	Ended Sampling	Method	SCHEDESS	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N S P M	High Concentration	02/01/13	Active	B	C N	Began February 2013
McAdory School	01-073-1005	4800 McAdory School Rd.	33.331111 -87.003611	N S P M	Typical Population	01/01/99	Active	T	C N	
Leeds Elem. School	01-073-1010	201 Ashville Rd.	33.545278 -86.549167	N S P M	Typical Population	01/01/04	Active	T	C N	
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N S P M	High Population Exposure	07/13/01	Active	T	C N	
Hoover	01-073-2006	3425 Tamassee Lane	33.386389 -86.816667	N S P M	High Population Exposure	07/25/01	Active	T	C N	
Corner	01-073-5003	1005 Corner School Rd.	33.801667 -86.942500	U S P M	Typical Population	07/22/01	Active	T	C N	

PM₁₀ IMPROVE

Site common name	AQS Site ID	Address	Latitude Longitude	SCALPE	Monitoring objective	Began Sampling	Ended Sampling	Method	SCHEDESS	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553.056 -86.815000	N S P M	High Concentration	04/21/04	Active		3 N	

PM_{2.5} IMPROVE Speciation

Site common name	AQS Site ID	Address	Latitude Longitude	SCAL Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDES	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N N C S	High Concentration	04/21/04	Active		3 N	

PM_{2.5} STN Speciation

Site common name	AQS Site ID	Address	Latitude Longitude	SCAL Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDES	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553,056 -86.815000	N N C S	High Concentration	01/01/01	Active		3 N	1 in 3 Alternate Schedule
Wylam	01-073-2003	1242 Jersey St.	33.499722 -86.924167	N S	High Concentration	10/01/01	Active		6 N	1 in 3 Alternate Schedule

RadNet

Site common name	AQS Site ID	Address	Latitude Longitude	SCALES	Type	Monitoring objective	Began Sampling	Ended Sampling	METHOD	SCHEDULE	QA/QC	Comment
N. B'ham NCore	01-073-0023	3009 28 th St. North	33.553 056 -86.815000	N	NC	High Concentration	04/19/07	Active		C	N	

HUNTSVILLE AIR MONITORING NETWORK DESCRIPTION

(As of May 2015)

Site ID	Pollutant(s) Monitored	Methodology	Operating Schedule	Monitoring Objective	Spatial Scale	MSA Represented	Site/Monitor Type	Begin Sampling	End Sampling
01-089-0002 Pulaski Pike	PM10*	SSI Hi – Vol	6 – Day	Population	Neighborhood	Huntsville	SLAMS	01/01/91	Active
01-089-0003 Downtown Garage	PM10	SSI Hi – Vol	Weekday	Population	Neighborhood	Huntsville	SPM Non-Regulatory	04/01/93	Active
01-089-0004 South Parkway	PM10*	SSI Hi – Vol	6 – Day	High Conc.	Middle	Huntsville	SLAMS	06/28/90	Active
01-089-0014 Huntsville Old Airport Road	PM10*	SSI Hi – Vol	6 – Day	Population	Urban	Huntsville	SLAMS	07/01/88	Active
	PM2.5*	SSI Lo – Vol	3 – Day	Population	Urban	Huntsville	SLAMS	01/01/99	Active
	PM2.5	SSI Lo – Vol	Continuous	Population	Urban	Huntsville	SPM Non-Regulatory	10/09/03	Active
	Ozone*	UV Photometric	Continuous	Population	Neighborhood	Huntsville	SLAMS	01/01/75	Active
01-089-0022 Capshaw	Ozone*	UV Photometric	Continuous	High Conc.	Urban	Huntsville	SLAMS	07/01/11	Active

*Sites used for NAAQS comparison.

Site ID	Location	Geographical Coordinate	Three Closest Roads	Proposed Changes
01-089-0002 Pulaski Pike	5006 Pulaski Pike Huntsville, AL 35810	Latitude +34.788333 Longitude -86.616111	Pulaski Pike Stag Run Winchester Road	None Proposed
01-089-0003 Downtown Garage	Madison St. – Garage Huntsville, AL 35801	Latitude +34.728740 Longitude -86.585010	Madison Street Gates Street Fountain Circle	None Proposed
01-089-0004 South Parkway	11525 S. Memorial Pkwy Huntsville, AL 35803	Latitude +34.620278 Longitude -86.566389	South Memorial Parkway Redstone Road Hobbs Road	None Proposed
01-089-0014 Airport Road	Old Airport – Airport Rd. Huntsville, AL 35802	Latitude +34.687670 Longitude -86.586370	Airport Road Memorial Parkway Leeman Ferry Road	None Proposed
01-089-0022 Capshaw	1130 Capshaw Road Huntsville, AL 35757	Latitude +34.772727 Longitude -86.756174	Capshaw Road Wall Triana Highway Balch Road	None Proposed

APPENDIX A

Jefferson County Department Of Health (JCDH) Annual Air Monitoring Network Plan

Jefferson County Department Of Health (JCDH)

Annual Air Monitoring Network Plan

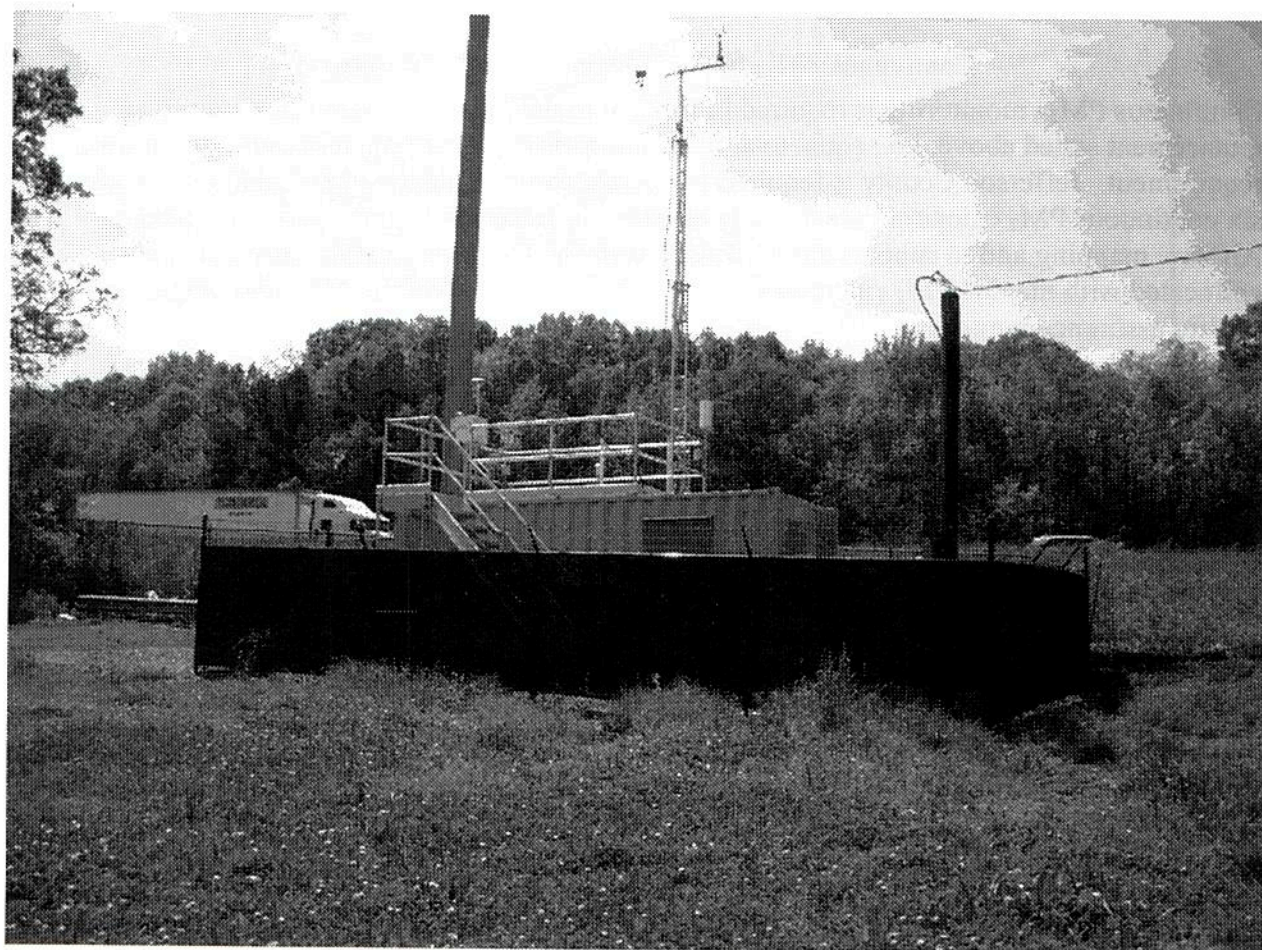
May 2015

Regulations codified at 40 CFR Part 58, Appendices D (Network Design Criteria for Ambient Air Quality Monitoring) and E (Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring) were reviewed to determine if modifications to the existing air monitoring network are required.

Summary of Changes to the Network

Lead (Pb) monitoring is required in major urbanized areas where Pb levels have been shown or are expected to be of concern due to the proximity of Pb point source emissions. According to the new lead regulations, sources emitting a half ton or more of lead per year would be candidates for lead ambient air monitoring. There are no longer any significant point sources of lead emissions greater than the half ton threshold in Jefferson County. Therefore, based on past monitoring and 2013 emissions inventory data, a lead source monitoring site is not required.

The EPA revised the NAAQS for Nitrogen Dioxide and it was promulgated in February 2010. In this rule, EPA required changes to the monitoring network that will focus monitoring resources to capture short-term NO₂ concentrations near heavily trafficked roads, to assess area-wide (or community-wide) NO₂ concentrations, and to assess NO₂ concentrations for vulnerable and susceptible populations. Jefferson County will be required to have two NO₂ monitors; one to address community-wide NO₂ and one to address near-road concentrations. Funding was received and a turn-key near road site, which meets the design and siting criteria spelled out in 40 CFR Part 58, was purchased and installed in October 2013. The site became operational on January 1, 2014. See following picture of physical building and site.



Arkadelphia Near Road Site (01-073-2059)

NO_y monitoring began at the NCore site January 1, 2011.

At the request of JCDH's Environmental Health Director, the Department began sampling PM_{2.5} at the Sloss Shuttlesworth site. This PM_{2.5} monitor was operated as a special purpose monitor for approximately one year to address community concerns. Sampling was completed and compared to the concentrations at the North Birmingham site. Concentrations were relatively similar. There are no plans to continue monitoring for PM_{2.5} at this site.

In 2011, JCDH's Risk Management Division determined that all decks throughout the monitoring network were unsafe for employees and recommended rebuilding the decks above the shelters. The Department has successfully completed deck and building renovation/replacements for all monitoring sites.

Continuous PM_{2.5} SPM (Special Purpose Monitors)

Continuous PM_{2.5} monitoring is required in relation to the minimum SLAMS monitoring requirement stated above; i.e., equal to at least one-half (round up) the minimum monitoring requirement. Jefferson County is required to operate two continuous PM_{2.5} monitors. However, six continuous PM_{2.5} monitors are actually operated in Jefferson County for the purpose of AirNow mapping and to support our EMPACT website. Continuous PM_{2.5} monitors are collocated with manual PM_{2.5} monitors at North Birmingham, Wylam, McAdory and Leeds for quality assurance purposes.

Application for Exclusion of PM_{2.5} Continuous FEM Data from Comparison to the NAAQS

Our monitoring program has historically operated PM_{2.5} continuous monitors primarily to support forecasting and reporting of the Air Quality Index (AQI). These monitors supply data every hour to update the AQI on our web site as well as on national web sites such as AIRNow (www.airnow.gov). We have been using these monitors since the early part of the last decade as we implemented the PM_{2.5} monitoring program. Over the last few years, a number of PM_{2.5} continuous monitors have been approved as Federal Equivalent Methods (FEMs). By utilizing an approved FEM, any subsequent data produced from the method may be eligible for comparison to EPA's health based standard known as the NAAQS. The primary advantage of operating a PM_{2.5} continuous FEM is that it can support both the AQI, while also supplying data that are eligible for comparison to the NAAQS. Thus, a network utilizing PM_{2.5} continuous FEMs can minimize the number of filter-based FRMs operated in the network, which are primarily used for comparison to the NAAQS. These filter-based FRMs are resource intensive in that they require field operations as well as pre- and post-sampling laboratory analysis which results in data not being available for approximately 2-4 weeks after sample collection.

Our monitoring program has been working with PM_{2.5} continuous FEMs including deployment at a few sites to evaluate their performance. Although the PM_{2.5} continuous FEMs are automated methods, these methods still require careful attention in their set-up, operation, and validation of data. Once we were able to collect enough data we began to evaluate the performance of these methods compared to collocated FRMs. That evaluation is explained further below and includes our recommendations on the use of the data from these methods.

Request for Exclusion of PM_{2.5} Continuous FEM data from Comparison to the NAAQS:

In accordance with the PM NAAQS rule published on January 15th, 2013 (78 FR 3086) and specific to the provisions detailed in §58.10 (b)(13) and §58.11 (e) we are requesting that data from the following monitors be set aside for comparison to the NAAQS. While our agency is working to optimize the monitoring instrumentation we use to meet all of our monitoring objectives, we are not yet at a point where the comparability of the PM_{2.5} continuous FEMs operated in our network (*or a sub-set of our network*) compared to collocated FRMs is acceptable such that we are comfortable using the continuous FEM data for comparison to the NAAQS. After assessing the comparability of the PM_{2.5} FEMs to the collocated FRMs for our network, we have determined that the sites listed below do not meet the comparability requirements. Detailed one-page assessments from which the information described below was obtained are included at the end of this section.

Table – Request for Exclusion of PM_{2.5} Continuous FEM Data

Site Name	City	Site ID	Cont POC	Method Description	PM _{2.5} Cont. Begin Date	PM _{2.5} Cont End Date	Continuous/ FRM Sampler pairs per season	Slope (m)	Intercept (y)	Meets bias req	Correlation (r)
<i>Sites with PM_{2.5} continuous FEMs that are collocated with FRMs:</i>											
North Birmingham	Birmingham	01-073-0023	3	Thermo Scientific 5014i	2/19/2013	12/31/2014	Winter = Spring = Summer = Fall = Total =	.903	1.612	yes	.90638

Period of Exclusion of Data from the PM_{2.5} Continuous FEMs:

The above table details the period of available data by monitor for which we are basing our recommendation to exclude PM_{2.5} continuous FEM data. Per EPA Regional Office approval, we will load or move as necessary these data to EPA's AQS database in a manner where the data are only used for the appropriate monitoring objective(s) (i.e., use data for both the NAAQS and AQI, just the AQI, or neither the NAAQS or AQI).

Additionally, we will continue to load any new data generated for the next 6 months (intended to represent the period until December 31 of 2015) in the same manner or until such time as we request and receive approval from the EPA Regional Office to change the monitoring objectives that the data from the PM_{2.5} continuous FEM can support. **Please note that JCDH is concerned with the performance of the PM_{2.5} continuous FEM especially in 2014 as this represents the latest data set and indicates that the PM_{2.5} continuous FEM is not operating within an acceptable range to be used for the NAAQS.**

PM_{2.5} Continuous FEM data for Reporting the AQI:

While we are requesting the monitors above not be used for comparison to the NAAQS, we do believe that the data are of sufficient comparability to collocated FRMs that they be used in AQI reporting. Therefore, with EPA Regional Office approval we will report these data on our web site and to AIRNow (www.airnow.gov). Additionally, we intend to store the data in EPA's AQS database that is used for "acceptable AQI" reporting (i.e., parameter code 88502) so that data users will know that these data are appropriate for use in AQI calculations.

Continued Operation of PM_{2.5} Monitors to Support NAAQS and AQI Reporting

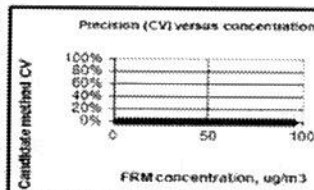
While we are requesting that data from the monitors listed above be set aside for comparison to the NAAQS, we will continue to operate PM_{2.5} FRMs to support the objective of comparison to the NAAQS. We will also operate our PM_{2.5} continuous monitors for use in AQI reporting. Each of these FRM and PM_{2.5} continuous monitors will be operated at the locations previously described in this plan and at the locations that meet the objectives of the Network Design Criteria for Ambient Air Quality Monitoring described in Appendix D to Part 58.

Summary - Candidate ARM Comparability

Applicant:	Alabama Department of Environmental Management
Candidate method:	MetOne BAM 1020 FEM - Class 2013
Test site:	IN Birmingham, Alabama - (Site location 01-073-0023)

Data sets	Number
Valid data sets available:	95
Number of valid data sets required for ARM Comparison:	90
Number of valid data sets for this test is:	OK
Additional data sets needed:	--

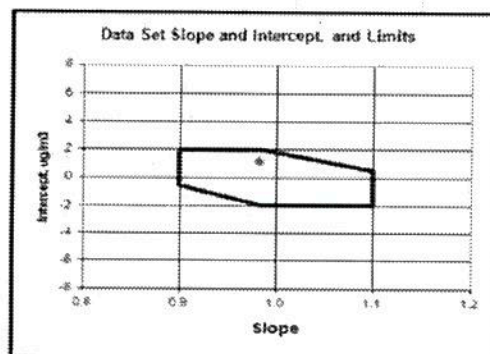
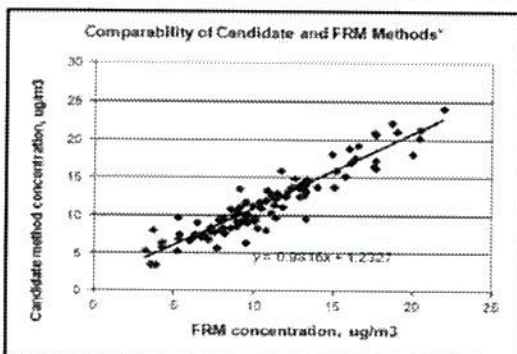
Precision (if data are available)	Data set mean, $\mu\text{g}/\text{m}^3$		Data set precision, $\mu\text{g}/\text{m}^3$		Relative precision (CV)	
	FRM	Candidate	FRM	Candidate	FRM	Candidate
Mean:	10.8	11.8				
Maximum:	21.9	24.3				
Minimum:	3.2	3.6				
Candidate / FRM Ratio:		109.6%				
RMS Relative Precision for this site:						
Test requirements - Class III:					10.0%	15.0%
Precision Test Results for site:						

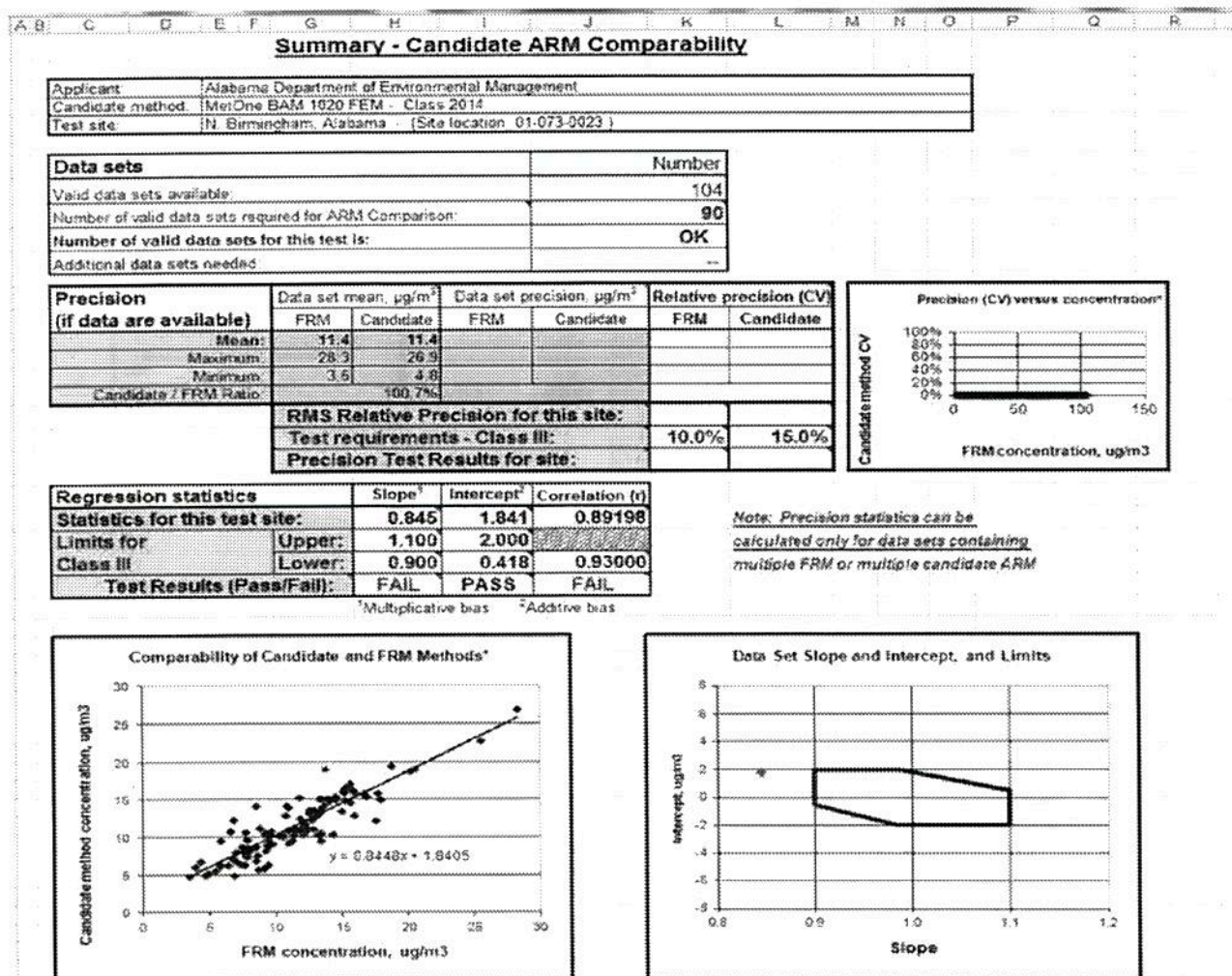


Regression statistics	Slope ¹	Intercept ²	Correlation (r)
Statistics for this test site:	0.982	1.233	0.93516
Limits for	Upper:	1.100	2.000
Class III	Lower:	0.900	-1.952
Test Results (Pass/Fail):	PASS	PASS	PASS

Note: Precision statistics can be calculated only for data sets containing multiple FRM or multiple candidate ARM

¹Multiplicative bias ²Additive bias





Network Review Findings

The existing network as summarized in the attached Air Monitoring Network Description complies with 40 CFR Part 58 requirements. The described network should adequately characterize typical population exposure concentrations and compliance status with the NAAQS for pollutants of concern.

The monitoring site location map can be found in the appendix.

APPENDIX B

**Huntsville Department of Natural Resources and Environmental
Management (HDNREM)
Annual Air Monitoring Network Plan**

ANNUAL AIR MONITORING NETWORK PLAN

May 22, 2015

Regulations codified at 40 CFR Part 58, Appendices A (Quality Assurance Requirements for SLAMS, SPMs and PSD Air Monitoring), C (Ambient Air Quality Monitoring Methodology), D (Network Design Criteria for Ambient Air Quality Monitoring) and E (Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring) were reviewed to determine if modifications to the existing air monitoring network are required.

NCore Ambient Air Monitoring Stations

Each State is required to operate one NCore site (multipollutant). Huntsville was not selected for the NCore site.

PAMS (Photochemical Assessment Monitoring Stations)

PAMS monitoring is required in areas classified as serious, severe, or extreme for the 8-hour ozone standard. Huntsville is presently classified as an ozone attainment area. Consequently, PAMS monitoring is not required.

SLAMS (State and Local Air Monitoring Stations)

The minimum ozone monitoring requirements are based on MSA (Metropolitan Statistical Area) populations and 3-year design value concentrations. The Huntsville MSA population is 417,593 based on the 2010 decennial census population. Huntsville's 3-year design value concentration for 2012-2014 is .068 ppm. MSA's with populations of 50,000 to less than 350,000 having a design value $\geq 85\%$ of the O₃ NAAQS are required to operate one ozone site. MSA's with populations of 350,000 to less than 4,000,000 are required to operate two ozone sites. Huntsville operates two ozone monitoring sites, as required.

There is a two-tier minimum nitrogen dioxide (NO₂) monitoring requirement. Near-road microscale monitoring is required in each CBSA (Core-based statistical area) with a population of 500,000 or more. Area-wide high concentration monitoring is required in each CBSA with a population of 1,000,000 or more. The Huntsville CBSA population is 417,593. Huntsville is not required to operate a SLAMS NO₂ monitor.

The minimum monitoring requirements for carbon monoxide (CO) require one monitor be collocated with a near-road NO₂ monitor in each CBSA with a population of 1,000,000 or more. Huntsville is not required to operate a SLAMS CO monitor.

The minimum sulfur dioxide (SO₂) monitoring requirements are based on a Population Weighted Emissions Index (PWEI), which is calculated by multiplying the population of the CBSA and the total SO₂ emissions (using the most recent published version of the National Emissions Inventory) within the CBSA area. The resulting product is then divided by one million, representing million persons-tons per year. Areas having a PWEI greater than 1,000,000 are required to operate 3 monitors; areas having a PWEI equal to or greater than 100,000 but less than 1,000,000 are required to operate 2 monitors; areas having a PWEI greater than 5,000 but less than 100,000 are required to operate 1 monitor. The Huntsville PWEI is 135 (based on 2010 decennial census population and 2011 National Emissions Inventory, total SO₂ emissions data for the Huntsville CBSA). Huntsville is not required to operate a SLAMS SO₂ monitor.

Lead monitoring (Pb) is required in areas where Pb levels have been shown or are expected to be of concern due to the proximity of Pb point source emissions. Generally, industrial sources emitting 0.5 ton or more of lead per year and airports emitting 1.0 ton or more per year would be candidates for lead ambient air monitoring. There are no significant point sources of lead emissions in Huntsville. Based on past monitoring and emissions inventory data, a SLAMS lead site is not required.

Huntsville's PM₁₀ concentrations are less than 80 percent of the PM₁₀ NAAQS (National Ambient Air Quality Standards). Based on Huntsville's MSA population being between 250,000-500,000 and low concentrations, Huntsville is required to operate 1 site. Huntsville operates 3 PM₁₀ sites located in south, central, and north Huntsville. These monitors can be operated at very low cost and provide good spatial coverage within the city. Experience has shown that members of the public want ambient air monitoring to be performed in their part of the city, and the PM₁₀ monitoring sites provide a monitoring presence at relatively low cost. Furthermore, the PM₁₀ data provide an indirect indication of PM_{2.5} spatial variability at a tiny fraction of the cost of operating multiple PM_{2.5} sites.

The minimum PM_{2.5} monitoring requirements are based on MSA populations and 3-year design value concentrations. Huntsville's 3-year design value concentration for 2012-2014 is 19 µg/m³ for the 24-hour standard and 8.9 µg/m³ for the annual standard. MSA's with populations of 50,000 to less than 500,000 having a design value ≥ 85% of the PM_{2.5} NAAQS are required to operate one PM_{2.5} site on a 1 in 3 day sampling frequency. Huntsville operates one PM_{2.5} site on a 1 in 3 day schedule to meet this requirement. Note: Operating frequency increases to daily sampling when the 24-hour design value is within ± 5 percent of the 24-hour PM_{2.5} NAAQS (34, 35, and 36 µg/m³).

SLAMS sites were also evaluated to determine consistency of spatial scales with stated monitoring objectives. Reference the attached monitoring network description. In addition to the information listed below, the description also indicates site locations, monitoring methodologies, and operational schedules.

Site #	Site Name	Pollutant	Monitoring Objective	Current Spatial Scale based on ADT* for nearest streets	Scale Meets Objective
0002	Pulaski	PM ₁₀	Population	Neighborhood	Yes
0004	South Parkway	PM ₁₀	High Conc.	Middle	Yes
0014	Airport Road	PM ₁₀	Population	Urban	Yes
0014	Airport Road	PM _{2.5}	Population	Urban	Yes
0014	Airport Road	O ₃	Population	Neighborhood	Yes
0022	Capshaw	O ₃	High Conc.	Urban	Yes

Notes:

Site 0002	Monitor 30.5 m from Pulaski Pike	ADT 13,800	Probe Ht. 4.3 m
Site 0004	Monitor 30.5 m from Mem. Pkwy.	ADT 37,800	Probe Ht. 4.3 m
Site 0014	Monitors 91 m from Airport Road	ADT 17,800	Probe Ht of PM monitors – 4.3 m
	Monitors 548 m from Mem. Pkwy.	ADT 84,750**	Probe Ht of continuous monitor(s) 4.5 m
Site 0022	Monitor 30 m from Capshaw Road	ADT 10,500	Probe Ht. 4.0 m

ADT = Average Daily Traffic

*Traffic count data as provided by the Traffic Engineering Department represents 2014 data.

**ADT counts on Memorial Parkway immediately north and south of Airport Road averaged.

SPM (Special Purpose Monitors)

The special purpose PM₁₀ monitor is operated Monday – Friday from 3:00 – 3:00 p.m. This data is used in reporting the daily Air Quality Index to the local print and television media.

Continuous PM_{2.5} monitoring is required in relation to the minimum SLAMS monitoring requirement stated above; i.e., equal to at least one-half (round up) the minimum monitoring requirement. Huntsville is therefore required to operate one continuous PM_{2.5} monitor. This monitor is a non-FRM/FEM/ARM. This data is used to support public reporting and forecasting of the Air Quality Index.

Site #	Site Name	Pollutant	Monitoring Objective	Current Spatial Scale based on ADT* for nearest streets	Scale Meets Objective
0003	Downtown Garage (AQI Reporting Site)	PM ₁₀	Population	Neighborhood	Yes
0014	Airport Road	PM _{2.5}	Population	Urban	Yes

ADT = Average Daily Traffic

*Traffic count data as provided by the Traffic Engineering Department represents 2014 data.

PM_{2.5} Chemical Speciation

Following an assessment of the PM_{2.5} Chemical Speciation Network (CSN) by the Office of Air Quality Planning and Standards (OAQPS), a number of recommendations were made to reduce the overall cost of the program, including reducing the total number of speciation sites that continue sampling. Consequently, sampling at the Huntsville site was discontinued effective January 24, 2015.

Network Review Findings

The existing network as summarized in the attached Air Monitoring Network Description complies with 40 CFR Part 58 requirements.

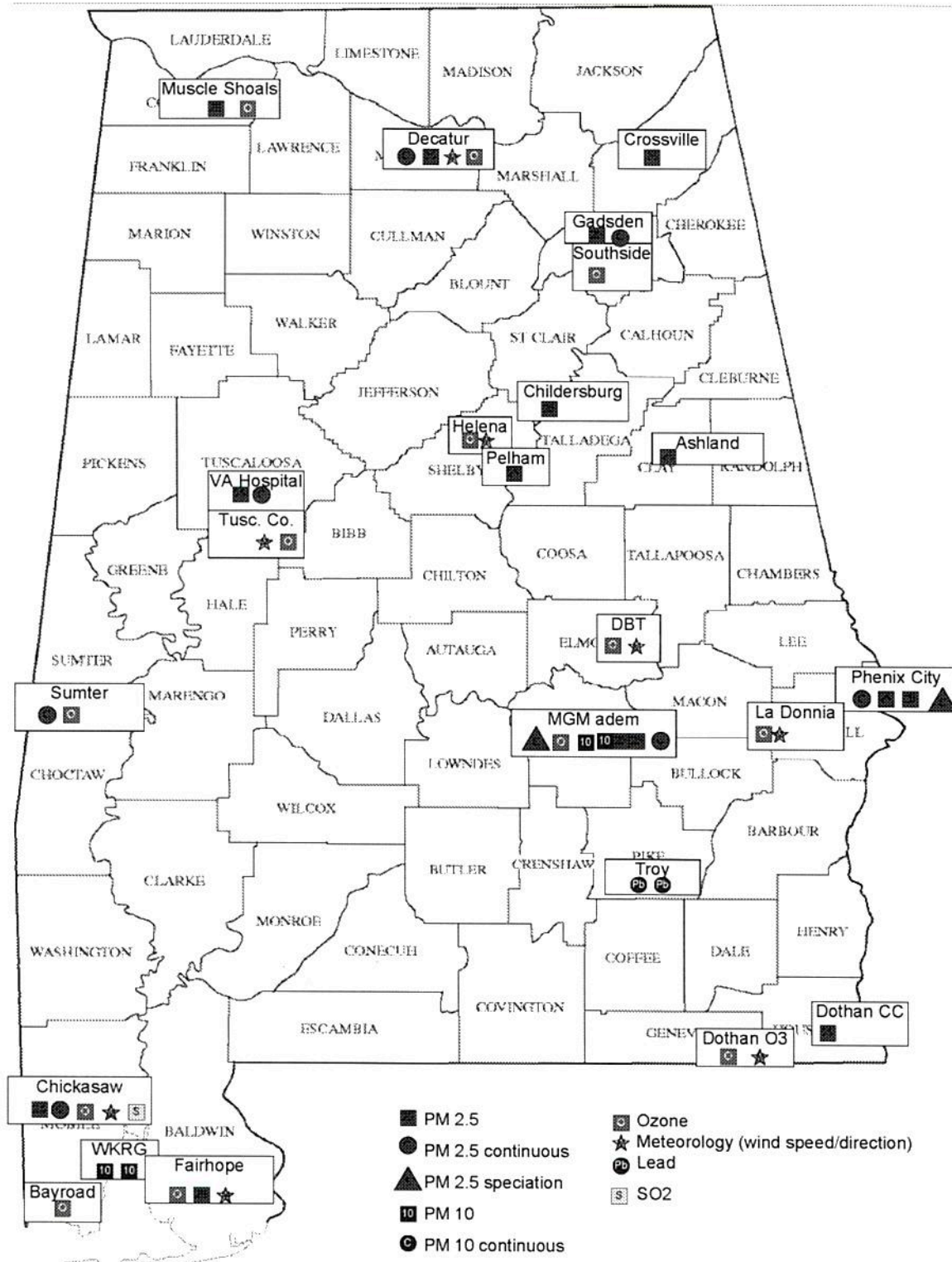
Attachments

1. Air Monitoring Network Description
2. Monitoring site location map.
3. Air Monitoring Equipment Assessment

APPENDIX C

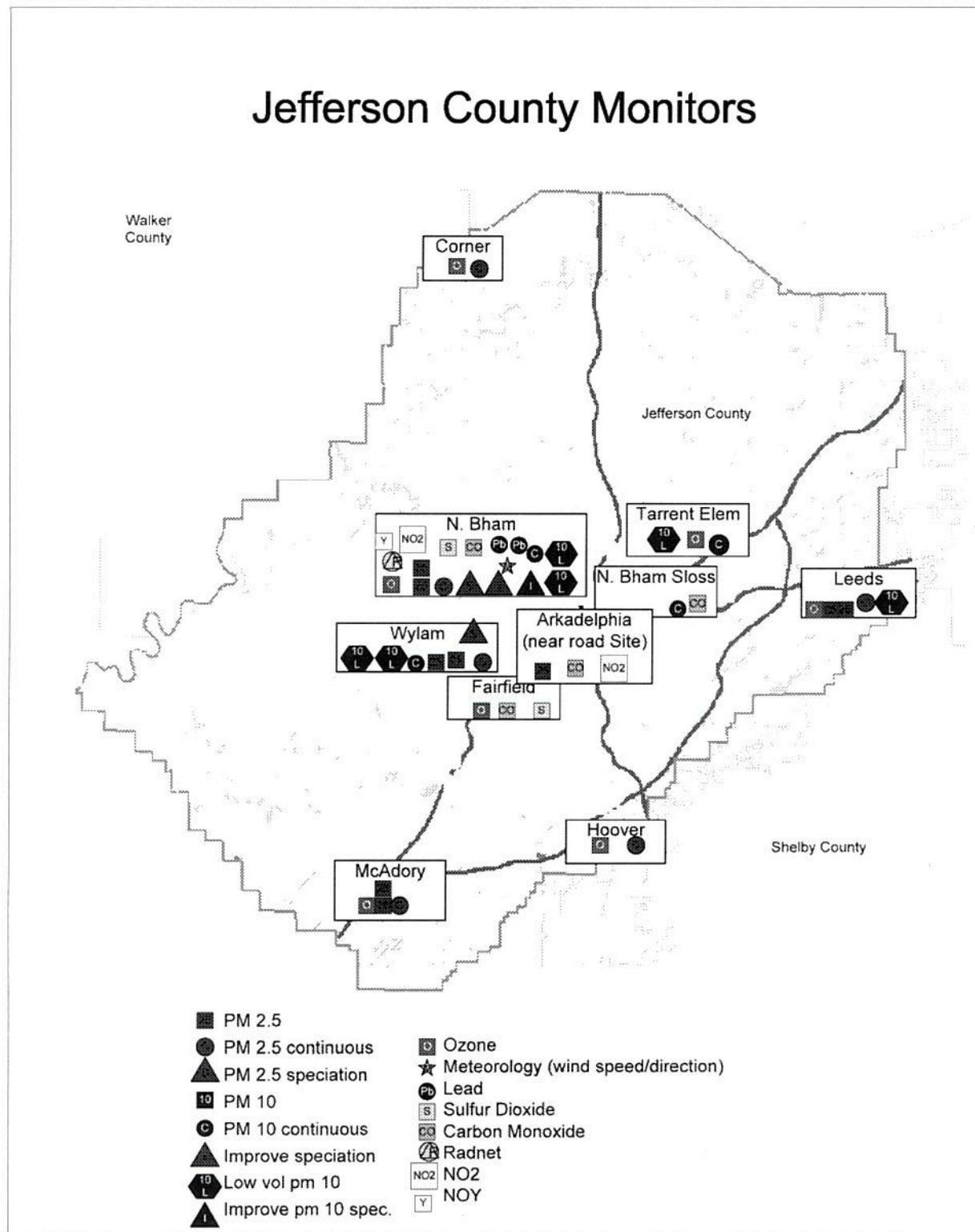
Maps

ADEM Monitoring Sites



Jefferson County

Jefferson County Monitors



City of Huntsville

